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ORIGINAL ARTICLES.

THE RELATIONS OF PELVIC AND NERVOUS DISEASES.

WITH SPECIAL REFERENCE TO OÖPHORECTOMY FOR FUNCTIONAL NERVOUS DISORDERS.

Presented to the Section on Neurology and Medical Jurisprudence, at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver, Colo., June 7-10, 1898.

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The question before us is one of great importance, and has presented difficulties fully commensurate therewith, but experience, more accurate and trustworthy if less fascinating and brilliant than the most ingenious theorizing, has answered at least a part of it.

There can be no doubt as to the frequent and important relationship existing between the two sets of symptoms under discussion, but the nature of the connection and the way in which it is established in each individual case is a matter by no means so clear, while the interpretations which may be put upon the same set of phenomena differ as widely as the theories and prejudices of those who are called upon to make the decision. The ease with which all nervous symptoms may be so simply and confidently referred to disorders of the pelvic organs, and the equal facility with which objections on the ground of physiology or experience may be silenced by a jaunty and wholesale use of that much-misunderstood and overworked word "reflex," have settled it as a well-understood fact in the minds of a large part of the laity as well as of the profession, that if a woman is "nervous," and has at the same time some uterine displacement or inflammation or neuralgia, the real cause of her sufferings has been found, and there can be no doubt of the relation of cause and effect between them. The belief has led to a vast amount of gynecology and surgery useless and worse than useless.

I presume it is true that the popular ideas are often more extreme in this direction than those of the most conservative, at least, of the profession, and that a certain amount of treatment is undertaken quite as much to satisfy the wishes of the patient or her friends, as to carry out the requirements of a well-considered diagnosis. But the popular medical errors of today, as has been shrewdly remarked, are the professional medical errors of a former generation, and women believe as our predecessors taught their mothers, and not as we would teach themselves. In great numbers of the cases of chronic invalidism familiar to most of us, the mutual interaction of somatic and psychic influences has made so complicated an entanglement, that in the individual case the truth is by no means easy to trace; and when the practitioner has placed before him for immediate adoption one or the other of two extreme alternatives, that which brings into the foreground distinct symptoms and definite lesions susceptible of operative interference, is naturally enough the more attractive. This apparent decisiveness and practicality, combined with a full appreciation of the safety of modern surgery, have led to an immense amount of activity that has done more harm than good.

There are two distinct ways in which the influence of the pelvic organs upon the nervous system is felt. In the first, the diseases of the uterus, ovaries and adnexa produce the same amount and kind of nervous symptoms that other wasting and painful diseases may do, either directly, or indirectly by way of anemia and impaired nutrition. It has often been remarked that hysteria is not usually found in connection with gross organic disease of the uterus, and the same is true of the more vague condition of neurasthenia. Even with such lesions as displacements, which might be supposed—as keeping up a more permanent irritation of a low grade—specially prone to cause functional disturbances; we find the latter associated, not so much with an extreme procidentia, for instance, as with those slighter forms only to be detected by the trained senses of the specialist. In other words, when well-marked and clearly diagnosticable lesions of the pelvic viscera coexist with the well-marked nervous symptoms, there is no close correspondence in the severity of the two sets, and it seems to me more philosophic, without denying all influence to the pelvic viscera, to assume that in the great majority of cases the pelvic lesions are certainly not the only factor—and perhaps not even the important and causative one—but rather are coexistent and dependent either upon two different causes or upon a single one underlying both, which may often be a general impairment of nutrition. The fact that the attention of nervous patients is so frequently and strongly directed to the pelvic organs proves no more and no less than the kindred facts of "nervous dyspepsia," cardiac disease or "spine disease."

The second of these ways is that much less easily explicable influence which the physical development of the sexual organs, normal or abnormal, exerts upon the growth and functions of the nervous system in some of its higher manifestations—evident at a very early age, rising to its greatest activity during the period of complete sexual development, and again decreasing or disappearing after the time of involution. Here also it is quite as true that the two developments, pelvic and nervous, are coincident, rather than that either is strictly consequent upon the other. Certain it is that interference with the normal relations and development of the two under the influence of improper education, social conventionalities, or conflicting interests, has much to do with the production of certain forms of nervous disease.

Like many other well-known facts, these relations are open to wrong interpretation on both sides. They may be, in the individual case, obscure and totally overlooked and all connection denied, though of this

error in practice the risk is slight. If the practitioner be inclined to forget, there is usually a hypochondriac patient or her disinterested friend to remind him. On the other hand, their importance may be grossly exaggerated. While we have admitted the close connection and parallel growth of the sexual organs and portions of the nervous organization, it is probably true that after a time, perhaps an early one, the habit of growth on each side becomes fixed and can progress independently of the other, so that nervous peculiarities which at first were closely connected with the sexual development have become established, and remain with comparatively little reference thereto. It is understood that among animals the effect of castration upon the general growth decreases according to the degree of maturity already attained, and the same thing is undoubtedly true of the human being.

The cessation of sexual activity in the female is marked in the popular, even more than in the professional mind, by a decided tendency to nervous as well as physical disorders. The more gradual changes, or perhaps rather, fixation or crystallization, of mental characteristics, which go on slowly and gradually for some years in both sexes, being emphasized in the female by a well-marked and definite phenomenon, are very likely to be referred to that phenomenon as a cause, if, as not infrequently happens, those peculiarities approach the borders of mental unsoundness or exaggerated nervousness. In by far the greater number of cases the "change of life" is accomplished with but little disturbance, but it is exceedingly difficult to disprove to the patient that vague effect so commonly attributed to it, in view of the long time over which its influence is often suspected to be felt, sometimes hardly less than a fourth of the allotted years between the cradle and the grave. A woman is very apt to begin to think about it if she has any ill-defined nervous trouble at the age of 35 years, and will not cease to do so until it is accomplished, which may not be until she is 55.

Weir Mitchell has had the records of a large number of cases of melancholia examined with reference to the age at which they began, and finds no statistical ground for attributing its occurrence, as is so often done, to the change of life. In regard to neurasthenic symptoms it is certainly not strange that they should be more marked at a time when the general vigor is on the wane; when outward circumstances are very possibly of a character to throw one back upon her own resources, and call attention to her own physical and psychical peculiarities, but there is certainly no close limitation to the precise period marked by the cessation of the menstrual function. That crystallization of character which is likely to take place as years advance occurs in both sexes, and may be much earlier in one person than in another. Dr. Holmes' allusion to old women of both sexes is sufficiently familiar, as well as the complaint of Admiral Jervis that the Channel Fleet was commanded by "a lot of old women disguised as young men." If the connection were a very intimate and causative one we ought to see, instead of mental troubles coming on at the menopause, a very marked and positive cessation of them when the "change of life" is accomplished, which is very far from being the rule, although such exceptions do occur.

Looking at these relations from a therapeutic point of view, we may consider the treatment of nervous disorders by local treatment of the pelvic organs, and on the other hand, the influence of agencies acting through the nervous system upon disease of the pelvic viscera. It seems to go without saying that if a local cause of irritation is keeping up functional nervous disorders, it should, if possible, be removed, unless the removal will leave behind more trouble than it will take away. This is the question to be decided as each individual case comes before us, and is to be answered in the light of experience rather than as a matter of abstract probability. It is to be answered from the combined knowledge of the gynecologist and neurologist, united perhaps in the person of the same physician, but never by the mere operator anxious for a "record." When diagnosis is clear and treatment certain, or as nearly so as can reasonably be expected, there is little more to be said, but when the advantages to be expected from local treatment are somewhat doubtful and when it means feeling one's way through a wilderness of doubtful diagnosis to a merely possible cure, then even minor gynecology becomes of questionable benefit, and the very decided offsets should be carefully weighed.

A mass of hypochondriacal delusions can be more easily built up on this basis than on any other unless it is on the "spine." To be sure heart and lungs and liver and blood may serve their turn, but are more easily ruled out on account of the greater definiteness of the symptoms which can reasonably be assigned to them. Tradition, popular prejudice and accident play no inconsiderable parts in giving "that bad eminence" to the pelvic organs. An attack of "uterus on the brain" is not always wholly the fault of the patient. Like many other psychic abnormalities and superstitions it may be the result of faulty education, for which the over-enthusiasm of our own profession is often largely responsible.

When, however, we come to that less explicable and definite but no less real relation, where the functional activity, normal or abnormal, of the pelvic viscera is closely allied with nervous and mental manifestations and where pelvic disorder, instead of being, like lesions in other organs, simply a source of irritation, wasting or infection, is the origin or, perhaps more correctly a part and parcel of the nervous disorder, then the question of surgical interference is less easy to answer. If we are to look upon the growth of the two systems in question as rather corresponding and harmonious than as consequential, it is certainly possible or probable that after the early stages either one of them may pursue its course independently, if the other be abruptly interfered with.

It is certainly conceivable, on the other hand, that in many severe neuroses the removal of the most essential organs of the sexual system might be of great benefit, and we must look to experience rather than to a priori considerations for a decision. Under the stimulus of this theory and of hope, combined with confidence in the present security of surgical manipulations, the experiment has now been made many times.

If it were possible to anticipate by years the fate of each child; if we could know as a certainty, as we can now guess, what might be the abnormal tendencies in each, and what would be its opportunities for the restraint and correction of them, it is far from improbable that such an operation might prevent or modify their further development—although at the price of checking other growth—and would be a great source of relief to the patient, the family or the community.

This is as likely to be true of the male sex as of the other. But who would take this responsibility? Certainly not the physician, who knows that his fears are not always justified, and is aware how much may be done by training and by medicine. Who would voluntarily submit to it? Certainly not those who need it most.

In our present conditions of diagnosis and of civilization, it is as impracticable as the imprisonment from infancy of the hereditary thief or the hanging of the murderer before he has selected his victim. But experience in men and animals goes to show that if this change is effected later in life, its action upon the general sexual characteristics is much less. The growth and development has been accomplished and remains comparatively unchanged. Unfortunately, it is this condition which most closely represents the results usually found when it is sought to relieve the chronic nervous sufferer by a so-called "normal" oöphorectomy. The nervous disposition remains the same after the psychic effects of the operation per se have passed off, with the additional burden of new locations and excuses for pain, and the disappointment of a last resource tried and failed.

It has happened to me to have brought to my attention a considerable number of cases, which, for one reason or another, connected for the most part with nervous conditions, have had ovaries removed, either healthy or not seriously diseased. It would be, of course, entirely unfair to conclude statistically from these that the operation is nearly always a failure, for it is only the failures which call for further treatment, while the successes do not present themselves at "nervines." I have, however, taken pains to inquire for other cases of which these patients may have heard, since they are not likely to take so important a step without some definite encouragement, but without getting hold of enough of them to make me change my opinion.

I have heard of the remark having been made by some distinguished obstetrician that every woman who has been able to get out of bed unharmed in less than a week after confinement, was a curse to her sex, and a similar view might properly be taken of the very few successful cases of "normal oöphorectomy." Four years ago I reported upon twenty cases of this kind which had come to my knowledge, which gave one case of complete and decisive recovery apparently due to the operation, one (aged 40) in fair health, the operation in this case having been done for actual ovarian disease; one death, after many years of invalidism, succeeding the operation, but in no way connected with it; one death from cocain; one hopelessly insane. Some of the remainder, except one not heard from, were invalids for some years, and many are still so. In a few there was improvement as regards dysmenorrhea and local pain, without any material change in the general condition. I do not know what happened to most of them during the last four years. Fifteen others have come to my notice since, some of whom were inmates and some applicants for admission to an institution for the care of nervous cases. My information as to some of them is not sufficiently minute to make a statistical statement of much value. Two of them, some years after the operation, were "better," or "much better," but of the eight with whose cases I was more acquainted, only one seems to have experienced any benefit, and this of a doubtful character. She had the ovaries removed in 1894; grew worse until 1896; had the uterus removed in 1897, and went home "well." She seems, by her letter, to have had considerable sickness since, but is now "gaining and hopeful," a not unusual frame of mind for a time, but not always confidentially shared by the physician who has the opportunity to watch such cases after the first enthusiasm has worn off. One died after a condition of extreme nervousness with hallucinations, but it is not probable that the operation, which was for actual ovarian disease, had anything to do in one way or another with the final symptoms. It can only be said that it had not cured her nervous condition. One shot herself six months after a "very successful operation."

Mrs. J., a corpulent, dark-complexioned woman, had a variety of severe hysterical symptoms, ostensibly as the result of a fall from a bicycle. After much ineffectual treatment, her ovaries were removed. I heard, from time to time, of the continuance and aggravation of her mental and nervous symptoms, and after some time she sought readmission to the institution where she had been treated previous to the operation.

Mrs. M., decidedly neurotic, was much grieved by the death of a daughter in early childhood. She was operated on for an appendicitis, in which one ovary was involved, with, according to her own statement, the distinct stipulation that the other was not to be meddled with. The surgeon, however, saying that there would probably be something the matter with it by and by, removed this also. Her disappointment and indignation at the breach of trust, and the loss of the possibility of another child was justifiably extreme. She is now a broken-down and incorrigible narcotist, saying that she has nothing to live for, and refusing to give up her morphin.

A young woman, of much courage and energy, but neurotic heredity and antecedents, had vertigo and some curious notions of the agoraphobic type, which she managed partially to conceal, knowing them to be morbid. She had both ovaries removed, and afterward managed to get through a training-school for nurses. She soon broke down again, and although, after long rest she improved somewhat, again went to pieces on slight provocation.

The others present no special points of interest.

Notwithstanding these unfavorable results and the conviction that on the whole these cases did no better than, perhaps not so well as, the same number submitted to a sufficiently prolonged and careful non-operative treatment, it would be going too far to say that the operation is never justifiable. There are cases whose nervous symptoms are so severe and so utterly rebellious to all other treatment that the slightest chance of getting rid of them, even at the risk of establishing new ones, may justifiably be taken. They can not be much worse, and they may be a little better.

Such cases are far from common, and can not be made to cover a tithe of the operations which have been done. The inconvenience and sufferings of dysmenorrhea, local pelvic neuralgias, and the more remote conditions of neurasthenia, dyspepsia, headache and others, are only in the rarest possible instances adequate excuse for it. The objection, however, arises not from the fact that there are undesirable accompaniments, for the price of comfort, even if not of cure, would not be too great to pay if one could be sure of obtaining for it the desired result, but because in the vast majority of cases the price is paid and can not be recovered, while the relief is either none at all or only such as may be temporarily obtained from any strong impression whose effect is hopefully awaited.

In nineteen-twentieths of the cases, normal oöphorectomy stands on the same basis as regards its immediate effect on the patient as any of the popular forms of faith cure. No form of functional trouble

of the nerves, even when supposed on good grounds to be connected with disease of the pelvic organs, should be submitted to oöphorectomy until every other means has been tried, not merely perfunctorily and as a mere excuse for operating, but methodically and faithfully.

On the other hand, what is to be expected of treatment of nervous symptoms as to its effect upon actual pelvic disease? According to the faith-curists of all sorts—everything; according to rational pathology, little cure but much relief in some cases. Every one knows how much the condition of nutrition influences the degree to which local symptoms become wearing and irritating upon the general system. Purely subjective pelvic sensations are not disease of the pelvic organs at all, and provided they are recognized as being what they really are, no one would pretend to treat them locally, but erroneous diagnosis has undoubtedly thrown many such cases, either into the hands of faith-curists, who have not failed to glorify themselves therefrom as cures of organic disease, or into those of operators, with the result already described.

On the other hand, we know how useless, and worse than useless, it is to persuade a patient with cancer or fibroid that her pain is only "nervousness," and hemorrhages of no consequence. The attempt to do so, if successful, may cost her life, and is little less than criminal. Faith-curists, whatever their sect, and whatever we may think of their claims or results in functional cases, are here the most rampant and dangerous of quacks.

From all which it follows that, in this region, as in many others where medicine and surgery come in close contact, the diagnosis is the crucial point, and it should be made before the operation. Experiment with good results hoped for is not justifiable, and "art for art's sake" is no motto for the surgeon.

THE METHODS EMPLOYED IN EXAMINING THE EYES FOR THE DETECTION OF HYSTERIA.

Presented to the Section on Neurology and Medical Jurisprudence, at the Forty-ninth Annual Meeting of the American Medical Association held at Denver, Colo., June 7-10, 1898.

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CHICAGO.

Although much has been written regarding the value of the ocular signs and symptoms of hysteria in the diagnosis of that disease, I believe there is good reason for returning to several matters in this connection that seem to me of vital importance, especially as I do not think sufficient stress is commonly laid upon the means by which one must arrive at diagnostic conclusions.

My own belief, after a somewhat extended acquaintance with this disease is, that, if one were to make a special study of that organ that most uniformly exhibits the evidence of hysteria, the eye would afford the most information, even more emphatically than the skin or the mucous membranes. On the other hand, anomalies of the general sensibility are probably more easily detected by the average individual (who methodically searches for them) than are ocular defects. But as the scientific observer omits no examination that will assist him in arriving at proper conclusions in diagnosis, prognosis or therapy, I enter a plea for a more thorough and more general use of certain methods employed by the ophthalmologist in detecting the presence of ocular hysteria as one manifest of the general neurosis.

First of all, then, what are the commonest ocular manifestations of hysteria, what the most reliable means for their detection, and how may errors in examination be avoided? I need hardly say that some acquaintance with the use of the ophthalmoscope is of great value in the diagnosis of ocular hysteria, and in investigating the subject one should be certain that there are no alterations in the interior of the eye to account for the visual disturbances. It is not fitting that I should point out the value of ophthalmoscopic examinations to the trained neurologist; I do not very well see how he can dispense with them. Should he be unable to examine the background of the eye with the mirror he should at all events, seek a report upon the condition of the fundus at the hands of some confrére expert in that work. As is the case with other organs of the body, there are absolutely no tissue alterations to be found in any part of the eye, due to the presence of hysteria. A negative report upon the fundus condition is, therefore, a *sine qua non* in examining a suspected hysterope.

ANOMALIES OF ACCOMMODATION.

Taking one age with another, the commonest ocular sign of hysteria is a defect in the focusing power of the eye—anomalies of accommodation. For various reasons these conditions have been called *hysteric insufficiency of accommodation, ciliary paresis or paralysis, painful accommodation, nervous asthenopia*, etc. The patient complains of the usual symptoms of asthenopia—pain in the eyes and forehead when attempting to read or do any other near work, blurring of print, photophobia, frequent winking, etc. These cases are rarely permanently relieved by glasses or by an exclusive local treatment of the eye. In all there is a defect in the range of accommodation. This so-called paresis of accommodation is nearly always in the form of a true hysteric contracture of the ciliary muscle—the motor power by which the eye is focused for various distances. The nearest point for which the eye can accommodate itself for the distinct seeing of small objects varies with the age of the individual. As you are well aware, this point is quite close to the eye in childhood, remote from it in old age. On the other hand, every eye has a certain range of accommodation; that is, there is a certain space within which small objects can be distinctly seen, and when the eye is normal, or when the refraction is rendered normal by distance glasses, this range is singularly and wonderfully constant in individuals of the same age, and I believe that the neurologist who is on the lookout for deviations from the normal accommodations will obtain assistance in diagnosis by bearing this fact in mind For all practical purposes, however, one may ignore the extent of this accommodative range and confine one's attention to the nearest point of distinct vision, that is almost always affected in hysteria, that is to say, is usually too near or too far away from the eye of the hysterope. The following table indicates the proper distance, and it is a very easy thing to determine any deviation:

Age.	Nearest point of distinct vision.
10	7 cm.
15	8 "
20	10 "
25	11.7 "

Age.	Nearest point of distinct vision.
30	14 cm.
35	18 "
40	22 "
45	28.6 "
50	40.5 "

An eye that is under the influence of hysteria acts either as if it were under the influence of pilocarpin or atropin; the patient is able to read fine print either abnormally near or sees small objects most distinctly farther away than he should.

In practice, all that it is necessary to do is to have the distant vision, if abnormal, corrected by glasses and then ask the suspected individual to read the finest diamond print, held as near to the eye as possible. The patient, with his back to a good light, is asked to read a portion of a page of this print, at the normal distance from the eye, as shown by the table. If he continues to read it when brought a couple of centimeters or more nearer, or if he cannot read unless it is removed farther away than the normal distance, a defect of accommodation is certainly present. I recommend this as one of the most satisfactory and most easily applied of all the tests. As in other forms of spasm or paralysis of accommodation, the condition may often be relieved by glasses. It often happens that a young subject must be treated as if he were sixty years of age, requiring a strong convex glass for reading at the normal distance or a concave glass for street wear. In both instances a few drops of a 1 per cent. solution of atropia will disclose the true refraction, often unmasking the hysteric character of the defect.

DEFECTS IN THE FIELD OF VISION.

As every neurologist knows, defects in the field of vision constitute some of the commonest signs of disease of the ocular apparatus, and that they are of paramount importance, while a knowledge of their peculiarities is of great value in determining the presence of hysteria. For purposes of comparison, I show two perimeter charts: one of the normal field and the other furnished by a hysterope under my care. The predominant peculiarity of an hysteric anomaly of the visual field is, that while in every other disease (except hysteria) where peripheral limitations occur, the color field is affected *pari passu*, or in a greater proportion than the field for white. In non-hysteric diseases perception of color is often entirely lost, and yet fairly large areas susceptible to visual sensation from a white disc remain. In hysteric amblyopia the field for colors is of greater extent or is less affected proportionately than the field for white objects, *just the reverse of that which obtains in other nervous affections*. Even where the field for white is still the largest it can usually be shown (when there is *any* perimetric defect) that the visual field for red is larger than that for blue, and measurements for these colors should always be made in doubtful cases. One of the best examples of this reversal of the color field occurred in the case of a young lady, aged 17, in delicate health, who began to complain of her eyes. She then noticed that she could not see well in the distance or read ordinary print with the right eye. There were no fundus changes; patient was distinctly hysteric; had attacks of weeping without apparent cause, pharyngeal anesthesia, lump in her throat, etc. She had spasm of accommodation, was able to read only coarse print and that at from 6 to 10 cm. in front of the eye. She could not read fine print at any distance. I wish you would especially notice that her field for red is larger than that for white.

It must be remembered, that even where the patient does not complain of visual disturbances quite marked defects of indirect vision may be present. If these do not proclaim themselves at once they may be developed by fatigue of the retina. The patient is asked to look steadily for a couple of minutes at a near object and then the field for red and green should be mapped out, followed by that for white, and vice versa. The amblyopia may be so marked that the field for white and colors is reduced to the vanishing point, a condition of affairs which it is not improper to regard as an anesthesia of the perceptive elements of the retina and in correspondence with the loss or perversion of sensation exhibited by the skin and mucous membranes in other phases of the disease. In such instances it rarely happens, even where the central vision is reduced to 1/10 or 1/20 of the normal, that it prevents the patient from walking about as if he had good vision. I have now under my care a child who can not read the coarsest print at any distance, whose distant vision is reduced to finger counting at four feet and whose color-field and the area for white measure about 5 degrees, and yet to all outward appearances she has good eyesight, that is, she does not stumble over small articles of furniture placed in her path and her parents have difficulty in believing that her vision is defective.

My principal reason for referring to these defects in the visual field, so well known to all of you, is to insist upon a certain form of examination. Hysteria is essentially a fatigue neurosis and in the use of a subjective test like the perimeter one may easily obtain evidence that is quite misleading. In other words, mapping out the limits of the field of vision in a hysterope requires more time and patience than is generally given to it. In my opinion, all uncomplicated cases of hysteric defect show a concentric contraction and a fairly uniform boundary of the visual field. In the case whose field I show you there were, when it was first measured, several apparently reentrant angles, but these disappeared when the patient was allowed to close her eyes and rest for an instant every thirty seconds during the examination. I do not think that hand perimeters, or objects simply held in front of the face, should be used in examining hysteric patients. A stationary perimeter, accurately adjusted should always be employed and the suspected hysterope should remove the chin from the rest and close the eyes frequently during the examination. Moreover, only one eye should be examined at a sitting and control tests must be repeatedly made. I have often had an opportunity to observe the necessity for taking these precautions, and am convinced that improper conclusions may readily be drawn from the usual method of examination.

MONOCULAR DIPLOPIA OR POLYOPIA

is a curious hysteric phenomenon, probably the result of ciliary spasm. When care is taken not to suggest it to the patient, it may be developed in many hysteropes. I say developed, because, like defects in the field of vision, the patient is usually unconscious of the double vision, as such. It commonly presents itself to him or her as part of the visual defect and the manner in which the examination is carried out is of great importance. A test should be made in both a lighted and darkened room. In the former, one eye being covered, a white match is held vertically three

or four inches in front of the uncovered eye. As it is slowly moved from its first position to a point three or four feet away, the patient is asked how many matches he sees. In most cases the match will present a double image when held quite near the face; the images approach each other and become confused as they are removed, to again separate more and more until the meter distance is reached. The match is again, from this point, gradually brought close to the eye, when the same phenomena, but in reverse order, will be manifest. The second eye is similarly examined and, finally, the room is darkened and a further (control) test is made with a small candle flame. Sometimes three or more images (polyopia) are observed and it is usually possible to exclude one or more of these by interposing a card, so as to cover various segments of pupillary area during examination.

A few words about *pupillary anomalies* in hysteric subjects, because there is much confusion on this point. As a rule, when either or both pupils are unusually contracted or unusually expanded the ordinary reflexes are preserved, that is, they *contract* when light is thrown upon them and when suddenly asked to fix a near object, and they expand when light is withdrawn or when the patient is told to gaze into the far distance. This is, or ought to be, a very simple matter, but in cases of hysteric amblyopia some care should be observed in making the examinations. The patient should be seated facing a half-lighted window; the unclosed eyes are completely covered with a black cloth and he is told to look, and to continue to look, as if gazing upon a distant object which has been previously pointed out to him. In thirty seconds the cover should be suddenly removed and the contractions of the pupils, or its absence, noted. The reflex contraction of the pupils for convergence or accommodation should be tested in a light as dim as is consistent with the observer's ability to see the patient's pupils. Having been told to look at an object across the room for half a minute, he is now asked to quickly fix the end of the finger held four inches from the patient's face. By means of these simple but effective devices one may often avoid the mistake of concluding that he has to deal with a pupil that does not respond to the reflexes mentioned.

I need not remind you that in hysteric amblyopia we frequently find *macropsia* and *micropsia*. Usually the patient complains of this strange symptom, probably due to irregular contracture of the ciliary muscle, but it is often worth while to test for it. A long, lighted candle is held before each eye of the patient at distances of one, four and ten feet, and he is asked whether it gets longer or smaller in size. Notes are made of his answer and the experiment repeated in a day or two.

A very common and, in my opinion, characteristic eye-sign in hysteria is spasm of the orbicularis, the so-called blepharospasm. When this is unilateral and accompanied by photophobia, or spasm of accommodation, it is almost invariably hysteric, and I believe that the majority of the spasms of the orbicularis are of this character, whether in the form of blinking or constant winking of the eyes, or where the spasm is much more marked and involves the facial muscle.

The Phonendoscope as an Ear Trumpet.—Surprising results have been obtained with deaf subjects, especially in reading aloud to them, by removing the external rubber plate of a phonendoscope, and speaking directly into the apparatus, as into a phonograph, with the tubes in the deaf person's ears.

HYSTERIA IN CHILDREN.

Presented to the Section on Neurology and Medical Jurisprudence, at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver, Colo., June 7-10, 1898.

BY J. G. BILLER, M.D.

CHEROKEE, IOWA.

Hysteria is recognized as well worthy of our deepest study and best thought, by those most familiar with it. Notwithstanding this fact, and the volumes that have been written about it, we must acknowledge that in many ways we are wofully ignorant regarding it. We all, probably, feel at times as though, if there were anything which we have not found out by practical experience pertaining to this disorder, we are perfectly willing to remain uninformed.

No matter how willing we may be to call it quits, our omnipresent foe (hysteria) never will consent to that, and by appearing in new phases and new forms, as well as new combinations, forces us to learn more and more regarding it. The more we know of it the less liable we are to use some such an expression as, "Oh! it is nothing but hysteria, and does not amount to anything!" No one would want to say that of any other disease which causes so much suffering and unhappiness, and destroys the pleasures and comforts of as many homes as does hysteria. The temptation thus to speak of it is because we often feel that if the patients would, they could, control themselves, and we back up our ideas with the fact that some simple but disagreeable treatment has often caused the entire disappearance of the symptoms, and for this reason it is thought that if very much were the matter the result would have been different. These brilliant and dashing flank movements are not always successful, and we have to settle down to a regular siege, from which we often withdraw defeated, and too often our defeat is caused by our treating our foe with contempt; the patient becomes dissatisfied and passes, frequently, into the hands of some quack or charlatan, who thrives by accidentally—and probably unconsciously—knowing how to take advantage of some of the tricks of this powerful but susceptible enemy of the human family. Every physician, after having hours, days and weeks of his time taken up with hysterical patients, must oftentimes ask himself: "Where did all this host of hysterical men and women come from?" The answer to the question is: "From the mis-born, and mis-raised boys and girls of the past generation, and the children of the same class in the present generation are hurrying forward to recruit the ranks." I believe a hysterical woman can oftener be cured before she is fifteen years old than after, and it is for this reason that I wish to call your attention to hysteria in children.

This subject, as far as treatment can go, may be divided, primarily, into two classes: the first, those cases which never have hysteria till after puberty, but whose physiologic and psychologic development have been such as to leave the seeds well planted in a soil that has been carefully fertilized for their maturing. This would hardly be called hysteria in childhood, but the principal damage is done then, and that is the time when proper treatment should have been applied.

In the second division, we have the disease fully developed during childhood. It is often surprising to note what apparently slight suggestions will develop a hysterical attack in a young child. I remember a boy 3 years of age, who, upon getting up in the

morning, a week or so after having seen a man who was paralyzed in one leg go by a few times, said his leg was no good, and he could not use it and did not; careful examination was made, and nothing abnormal discovered except that he would not use that leg; he dragged it around all day, but that night, after he was put to bed, his father went in to play with him, and in the excitement of the play his paralysis disappeared, and he seemed never to think of it again. This was a child of very active imagination, and his mind had undoubtedly been impressed until he was unable to move his leg.

I have since then had two cases of partial paraplegia of hysterical origin in children. They were sisters, and of quite dull and heavy minds, whose imaginations were slow to be excited, and when the result was produced, it was just as slow and tedious to overcome. The father of these children had died of tubercular trouble, which started in the back, and one of his legs became nearly useless from sciatic neuritis. The children, after the father's death, were left in the mother's charge; she unwisely had a great deal to say about the father's sickness, and especially about his back and the inability to use his legs. The children were fond of sweet food and were allowed to indulge in cake, pie, etc.; in fact, this was about their whole diet. The living room was lighted by two small windows which were shaded by porches, and was heated in winter by a hard coal burner which was not much smaller than the room; the children's health was carefully watched by the mother; every little pain or nervousness was inquired after and examined into. The elder of these two girls (who were the youngest of a large family) had a spinal curvature, which became tender and painful; a short time elapsed before a cast was applied, and during this period she suddenly became unable to move the legs, and when put on her feet would tumble over if not held up. If held up for a little while she could partially stand by rising on her toes. Reflexes and sensation were normal, and after the application of a well-fitting plaster cast the legs became all right.

About a year later, the younger child, then about eight years old, was brought to see me for severe pain in the head; her temperature was above normal, pulse rapid; this continued for several months, and then began to improve, but all at once the legs became useless; she would not stand on them, and part of the time could not move them. Reflexes were normal; there was some pain in the crural nerves, otherwise sensations were normal. Various kinds and methods of treatment having been tried without success, galvanism was used for two months. At the end of this time she began to improve, and was soon able to be up and around; in a few weeks more she seemed as well as usual. She remained well for a year, when she had a slight tonsillitis, and before she was relieved of this her legs were again paralyzed. The battery was resorted to, and in a few weeks it had the desired result, although, to the best of my belief, no current came from the battery. No. 2 had hardly got her legs to work before No. 1 took cold and had paralyzed legs; the battery was still in the same condition, and it took six weeks to get the girl around.

This last attack was about a year ago. I have urged a better diet and more light in the living room and no conversation about sickness or sick people; but it is hard to convince the mother that anything but inheritance has aught to do with the sickness.

Paralytic hysteria, as represented by the above cases, is not so common as some of the psychic forms, but it is so marked that it attracts attention at once, while the latter often does not attract sufficient attention to be diagnosed as hysteria. I beli ve some of the peculiar fears of childhood are often manifestations of hysteria. I knew a little boy who would scream and cry so that he had to be taken from the room if any one began singing or playing the organ; this child afterward developed very marked hysterical symptoms.

Night terrors are undoubtedly, at times, of hysterical origin; for instance, a child three or four years of age, awoke one night screaming, and said the rats were after him; the next morning he did not want to eat breakfast in the dining-room for fear of the rats. This kept on night after night, and soon his naps in the day time were troubled with these terrors, and it was almost impossible to do any thing with him for hours at a time; regulation of diet, amusement and medical treatment, were all tried without benefit. The condition was carefully explained to the mother, who was advised to make him control himself. That afternoon he had a nap, and awoke the same as usual with the wild cry of rats; he would not sit on a chair or stay in bed or even be quiet in his mother's arms. No man with delirium tremens ever had greater fear of snakes than that poor child had of rats; the mother told him in a very decided tone that he would be whipped if he did not stop, and then, as he did not mind, he was spanked. This forced him to control himself for a few minutes; then he began again, and the spanking was repeated. This had to be done two or three times, but finally the child was forced to control himself, and was never troubled that way again. This may seem cruel treatment, but it became necessary, in some way, to force the child to exercise sufficient will-power to overcome his excessive imagination. The boy several times since has shown marked symptoms of hysteria, but owing to the care he has had has completely outgrown them.

I do not wish you to understand me as advocating whipping as a cure for hysteria, but in these pschyical forms, the child must be brought, in some way, to control itself and taught to continue this, and there is no question but what fear forces not only children but grown people as well to keep their imagination and desires well in hand. The cases which require punishment are, I believe, rare, but all these unfortunate children should have a strong hand to help guide and direct their imaginations.

One of the best instructors in self-government is the association of the child with other children; our public school life is valuable for that if for no other reason; there is no question but that children are often abused and imposed upon, still they soon learn that they can get along better if they behave themselves, and that if they wish to enjoy their play they must be agreeable to their playfellows. This is an excellent discipline, although it may occasionally make the parents a little angry when they think their child has been used unjustly—as it often is—but we must all expect to suffer some for the public good. The rough plays that bring home torn clothes and bruised bodies and limbs are not to be looked down upon. It is the freedom of the boy to indulge in any sort of physical recreation that his desires may dictate that has much to do with making his sex less liable to hysteria than the sex of his less fortunate

sister. The boy, as soon as he is old enough to be around, is dressed so that he can run, jump or turn heels over head; in fact, his movements are not interfered with in any way, either by dress or custom, but how is it with his sister? Whatever of liberty there is left after the method of dressing is taken from her by custom and the fear of being considered immodest. I think the little girl was right, who, when reproved for turning heels over head in the front yard, said, "if people did not want to see her, they must not go by when she was turning heels over head." She had the true sense of woman's rights—the right to be healthy and enjoy health in physical recreation.

Children should be well fed, and these neurotic children, as a rule, are poor eaters, both in quality and quantity. They should be confined to plain, nourishing food, and then forced to eat it. People often tell us they cannot get their children to eat, and are surprised when you insist upon their being made to eat; but I have had the pleasure of seeing several of these rapidly improve under judicious feeding. One case I will briefly describe: She was a delicate, nervous little girl, who was thin and anemic, unable to sleep at night because of nervousness. She wanted no breakfast, unless it were a cracker or a cookie, scarcely any dinner excepting dessert, but at supper she generally did eat a little better. She was absolutely forced to eat a large dish of oatmeal and milk, without sugar, each morning; a dinner of bread and butter, potatoes and eggs or meat, and drink a glass of milk, no dessert; for supper, she had a dish of oatmeal and milk, bread and butter and some kind of sauce, generally stewed fruit, either dried or fresh. Besides this diet she was allowed plenty of fruit, and was sent early to bed. She has been on this stuffing treatment for nearly two years, and is now strong, does her school work easily and well, never has headache, sleeps well, except that she gets up early in the morning. This child's poor health was attributed to going to school, as is done in a number of cases, and the children are kept out of school. I think there is no question but that their school work is too much for them in their physicial condition, but too often this condition is caused more by the improper home life than the school life.

Neurotic children suffer greatly from competitive examinations at school, and from the extra work that is often imposed upon them in preparing for school entertainments—especially in preparing for public recitations. I knew one young girl of 13 or 14 years of age who was standing her school work well till she was selected for an important part in some special exercise. She was impressed with the importance of her part, and from the careful drilling she got she became frightened and nervous, and finally ended by going into a hysterical faint after one of these drills. It was a year and a half before she was able to go to school again, and she had during that time vertigo and other hysterical manifestations. At the end of this period she started to school, but she has never been allowed to do any but regular work, which she has accomplished with ease.

I have not referred to the medicinal treatment, for it has been quite thoroughly impressed on my mind that drugs are seldom indicated, and their value is questionable. The price of healthy children is the same as that of Liberty—Eternal Vigilance—and unless parents and physicians are willing to pay that price, we can not expect to avoid hysteria and many of its relatives.

ORIFICIAL IRRITATION IN RELATION TO NEURAL DISTURBANCES.

Presented to the Section on Neurology and Medical Jurisprudence, at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver, Colo., June 7-10, 1898.

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It would seem, upon consideration, that many operations brought forward by the gynecologists during the last few years for relief of so-called reflex pains and other nervous disorders, particularly neuralgia and migrainoid headaches, have not given the relief that was promised for them. The same is undoubtedly true to a considerable extent in regard to the rectal surgeon's efforts, and notwithstanding the fact that deviating septa and hypertrophied turbinates have freely given off their offending portions, there still remain many who suffer constantly without a hope of relief; and in directing your attention into a new channel with regard to etiology and treatment of these conditions, I would urge the fact that, with a high nervous organization and free distribution of nerve-supply quite as complex as that of the other orifices referred to, the normal mouth has thirty-two teeth as additional predisposing factors, each with its own separate nerve-fibers from the wide-spreading carrier of sensation—the trigeminus. In addition to these connections each root is surrounded by a highly vascular peridental membrane, also in close connection with the blood- and nerve-supply, making it not unreasonable to suppose that all these taken together would offer a very frequent source of irritation. Considering also the fact that through caries the pulps of these teeth and the nerve elements they contain are often exposed directly to external irritants, the etiologic factors, particularly with affections within the range of the direct nerve-supply through which they carry the sensation, ought in a large number of cases to be found to be within the oral cavity. That this is often true without being suspected, through misleading symptoms, the trouble being treated as having its origin in some other of the orifices, will be shown, I think, by the cases described later.

Literature upon the subject of this and kindred disorders is very vague. We find neurasthenia, anemia and numerous other emias, held in a general way to be reponsible, and the recommended treatment beyond certain limitations, also becomes very general, depending chiefly upon general constitutional care, which is all very well so far as it goes, but as a rule the patients suffer on just the same. It is evident to those sufficiently interested to be more than casual observers that in close study of the symptomatology of those affections, with a view to discovering certain definite causes of irritation and the mode of procedure best calculated in each particular case to remove the etiologic factors, lies hope of relief. During the last few years my efforts have been directed to the study of certain peculiar forms of trifacial irritation, particularly one form of which little or nothing in the way of description seems to be extant in the literature of the subject.

Without attempting to go into a general or even a partially detailed description of the various possible irritations from within the oral cavity, I desire to treat of what I have found to be a very common associate of neural disorders. It is a noticeable fact that in the

mouths of all those so affected, wherever the natural teeth remain, their occlusal surfaces show that constant grinding and rubbing has abraded them, through the extreme pressure brought to bear during the paroxysms—if the pain be paroxysmal occurring in an intense nervous state—the result of hours of painful suffering or other like conditions. This has frequent mention by writers as noticeable among those who suffer from such disorders, but in no instance do I find where an author has thought fit to reverse the order of things and make the habit of the jaws, which is responsible for this condition, one of the etiologic factors in bringing about the disease, rather than a result, as it is generally held to be. Last year, before the Section of Stomatology, I described this hyperkinetic condition of the muscles of mastication and explained how irritation of the brain-centers governing these muscles, whether as a symptom of other neural disturbance or vice versa, would produce the same result, namely, an irritation of the peridental membrane surrounding the roots of the teeth, and how, through their apical formina, this irritation might be communicated to the many branches of the nerve, after which, as is well understood, the point at which that result expressed itself in pain, muscular spasm, tenderness of neuritis, hyperesthesia, anesthesia, or whatever the effect might be, could be reflected anywhere along the path of the nerve among its associates. Certain forms of this peridental inflammation and the resulting pain are quite familiar to dentists, but that there was grave trouble frequently caused by other forms of this affection, with which neither they nor physicians were commonly familiar, I have long been satisfied, and in the paper referred to I described a number of cases of extremely aggravated pain in the head and face, which were cured, or to a considerable extent relieved, at my hands, by the simple method of grinding the crowns of the particular teeth affected in such a manner that they could no longer be brought together. Since the writing of that paper, however, and during the last few months, through my connection with Trinity Hospital in Milwaukee, another form of this particular trouble has come to my notice in several cases, with symptoms such as are commonly ascribed to reflex expressions of uterine diseases, and it is to these that I purpose calling your attention.

In order that something may be understood of the manner of the operation of the jaws, which makes this possible, a little description of their anatomic relations, with particular reference to the development of this idea seems to be in order. Through the pterygoids a lateral grinding motion of the jaw of man takes place, which if pursued at night is easily noticed, and usually attention is called to it. If, however, the masseter and temporal muscles are called into unusual activity, the result is that the jaws are pressed firmly and tightly together, with a force varying in individuals from 200 to 270 pounds. With the jaws closed normally and the occlusion perfect, this force would be comparatively equally divided among the whole number of teeth. If, however, as usually happens in these cases, the jaws be shifted a little to one side or slightly forward or backward, then certain portions of individual teeth are brought together, and they alone must bear this tremendous force. Ordinarily the membrane surrounding the root is capable of withstanding a considerable amount of pressure for a considerable length of time. But by the continued application of this pressure, especially when weakened by other more general conditions, as of circulation or otherwise, this power of resistance becomes impaired and then one of two things must result—either a local disturbance made manifest by elongation of the tooth and soreness to pressure, a not generally serious affection, accompanied sometimes by localized pain, usually comparatively easily remedied, or as I have believed, a direct communication of this irritation to the larger nerve trunks, to be by them carried to other parts. It has been recently proven that the old idea—as given in Gray's and other anatomies—of a direct communication of artery, vein and nerve, from the apical foramen to the main trunk of the nerve, passing along the jaw, is generally, if not always, incorrect, and that there is a more complex nervous connection with nerve filaments extending directly from this membrane to the main nerve supply, and this scientific histologic demonstration is directly in line with my own clinical observation, because it explains at once what I believe I have demonstrated to be true: that any or all the nervous symptoms generally recognized can be the direct result of peripheral irritation through this peridental membrane. We are all familiar with the much-written and widely understood neural disturbances consequent upon eye-strain, but whoever heard of neurasthenia, hysteria or neuralgia resulting from jaw-strain, and yet this is exactly what does occur. If the use of certain muscles and the straining of those muscles can cause neurotic symptoms through irritation of the optic nerve-supply, why can not the continued application of hundreds of pounds of force directly to certain other branches of the nerve through which sensation is transmitted do so equally with the other part. This theoretic explanation is, I believe, borne out quite fully by the following cases which, for example, I desire to describe:

Case 1.—Mrs. —— complained of a general debility, loss of strength and poor circulation, and suffered intense pain at rather short intervals, which finally became shorter until the pain was almost continuous between her eyes at the base of the brain and in the vicinity of the ear upon the left side. Three operations by gynecologists, who had mistaken her symptoms for reflex pain due to some womb disorder, left her rather worse than better. The treatment of certain inflamed conditions of the pulps of her teeth and maxillary sinus, and a correction by grinding the surfaces of tooth crowns, giving evidence of receiving rather more than their share of the wear and tear has given her, at least for the few months past since the operation, complete relief.

Case 2.—Mrs. ——, a very great sufferer, pain in eyes, back of the head, which during severe paroxysms was severely felt also in the back, arms and leg, had become almost a hopeless neurasthenic. The birth of the last of her five children was coincident with the onset of the severe symptoms and naturally led to treatment for laceration and endometritis, but without result. The abraded crowns of several teeth and the set expression during pain facilitated diagnosis; the treatment applied was to grind the occlusal surfaces of the affected teeth until they could not meet in occlusion, and treatment of pulps of the teeth that were irritated, resulting in complete relief from pain and a generally improved condition.

Two cases were reported in the paper before referred to, one in which hyperesthesia of the lower lip and chin was instantly relieved by the extraction of a bicuspid tooth of a woman who had been treated, as she said, "for falling of the womb"; and another, a girl about 17 years old, whose extreme suffering for about eighteen months was finally relieved by grinding down certain teeth, irritated by grinding at night, found to be the probable result of sexual excitement as shown by a history of the case.

Many similar instances might be recited in which the symptoms of pathologic oral conditions have been

confused with those of the eye, ear, nose and rectum, as well as of the vagina and uterus, but the present purpose is chiefly to call attention to the fact that this habit of the muscles of the jaws is of extremely common occurrence—in fact, nearly always an active feature of nervous states—for if caused, as sometimes happens, by overstimulus of the centers controlling those muscles, the result of some etiologic excitement elsewhere, then the effect is simply to increase the severity of symptoms; on the other hand, it may be the irritant, and solely responsible, but in either case the simple attention necessary to correction of the difficulty is a matter of first necessity in the treatment of a large majority of sufferers from functional and other disorders of the nervous system.

NERVOUSNESS AN ELEMENT IN HYPERPYREXIA.

Presented to the Section on Neurology and Medical Jurisprudence, at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver, Colo., June 7–10, 1898.

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PITTSBURG, PA.

Temperature, from Hippocrates down, has been recognized as a factor in disease. In the present paper the topic is to be discussed with reference to the explosive (nerve-storm-like) and sudden elevation of temperature under certain mental impressions or conditions.

Musser attributes the stability of temperature to the central regulating apparatus, called the thermotoxic apparatus. This aggregation of forces is under the control of the nervous system, either through the motor or special nerves which pass with them to and from definite centers in the brain, called heat centers. He claims that the elevation of temperature is due to the increased disintegration of nitrogenous tissue. It has also been said that the high range is caused by the taking in of more poison than is gotten rid of, or, to give bacteriologic zest to the expression, the microbes are in competition with the corpuscles of the blood.

High temperatures are not so dangerous, or so uniformly fatal, as low. Da Costa records a recovery from a temperature of 110 F. in the axilla, following cerebral rheumatism. Teal reports a case of recovery from a spinal injury with a range of temperature of 112 to 114 F., which continued for days. Dr. J. B. Murdoch of Pittsburg, formerly Dean of the Medical Department of the Western University of Pennsylvania, admitted a case to the Western Pennslyvania Hospital Dec. 13, 1893, whose temperature on the eighth, ninth, tenth and eleventh days was respectively 112, 114.8, 119 and 120 F. His patient had hysteric symptoms and he, with others of the staff who saw the case, decided that the hysteria was the cause of the high temperature. The cause of these high temperatures is mere conjecture. The increased disintegration of nitrogenous tissue and the microbes in competition with the blood corpuscles can not be relied on.

Experiments upon dogs have shown that to irritate certain centers of the brain will control temperature, while destruction of the center will cause a high rise. I have thought that a hyperesthetic condition of the heat center might answer for the cause, but according to the irritation theory, nothing short of a paralysis of the center could cause the rise, while the hyperesthesia would control it. In the following cases the last thing mentioned could be the only plausible one to me:

Case 1.—K. R., aged 21, American, nurse. Disease diagnosed as spinal meningitis. Admitted to South Side Hospital Dec. 4, 1897. Family history negative. Personal history, typhoid two or three years prior. During the course of the disease she complained severely of a pain in back of head. Delirium marked. Three months ago confined to bed with severe pain around cecum and caput coli, with some inflation. No elevation of temperature, but nervous, with inclination to hysteric symptoms.

Present trouble began with severe headache, with boring pain in back of neck, followed by numerous chills and muscles of back of neck rigid, with head slightly drawn back, tenderness along spine and mild delirium. Retention of urine. At times evening temperature 107 F., but was promptly reduced in a very few minutes with ice sponge. Antipyretics had little effect. Pulse at times very weak. On the seventh day the temperature was highest, 118 F.

At times the temperature would drop from 110 F. to normal in a very few (twenty) minutes without interference, but mostly the sponge bath was resorted to with very prompt effect. Usually when she had the high temperatures she had marked hysteric symptoms. The fever always abated most rapidly when treated by those in whom she had most faith and liked best. A visit from friends would provoke an attack, seemingly, to me, to show how sick she was.

My diagnosis differed from those who had preceded me, as I could see nothing but a very exaggerated nervous condition attended by hyperpyrexia and hysteric symptoms. At the end of fifteen days she was sent home.

Case 2.—Lizzie N., aged 29, Irish, domestic. In United States eight years. Admitted to South Side Hospital of Pittsburg, Dec. 10, 1897, her disease having been diagnosed articular rheumatism of one week's duration, which was ushered in by a chill.

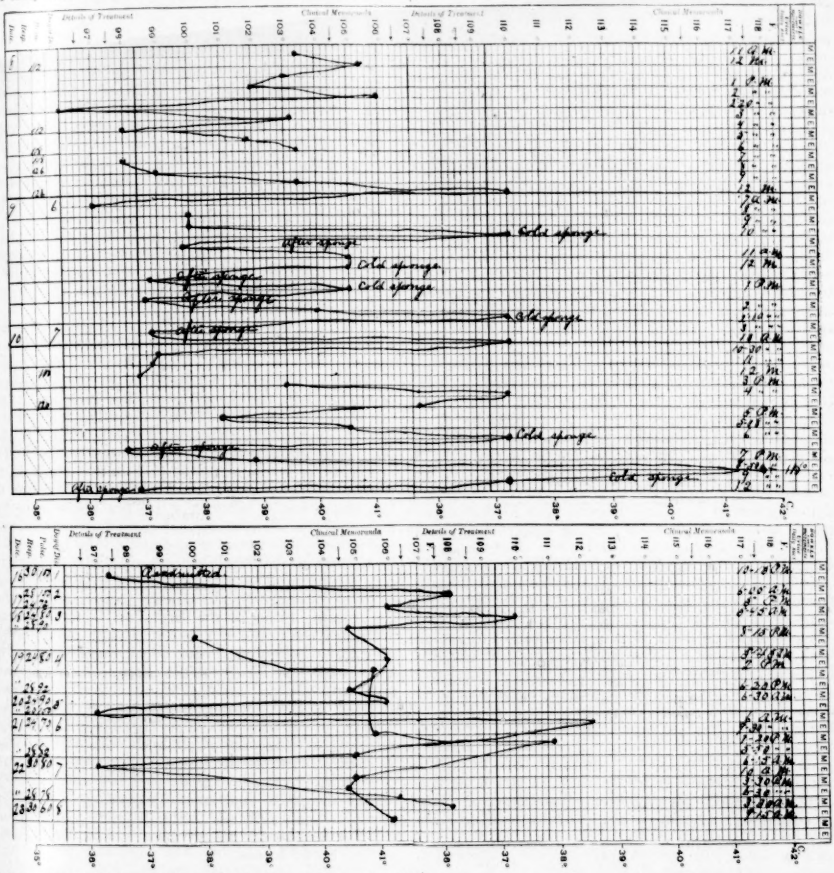
On admission temperature 99 F., pulse 102, respiration 24. Joints sore and very tender, especially the knees. On the second day after admission the temperature became normal. On the fourth day 104 F., eighth and ninth days normal. On the thirteenth day normal, but on the fourteenth it rose to 106.2, pulse 80. On the eighteenth day 110.9, pulse 80; twenty-third day 11:30 A.M., 110, but at 2:30 P.M. had dropped to 99, pulse 80. At various times from the eighteenth to the twenty-third day the thermometer registered 110.

On the thirty-fourth day of the disease the register was 112. On the thirty-fifth day at 11:30 A.M. I took her temperature under the tongue at 116 F., with a pulse of 80 and a cool skin, and twenty minutes after I left the ward it was registered at 102 by another thermometer. On the forty-second day after admission the thermometer registered 118.4. Her temperature for the past few days ran along from 105 to 108, occasionally down as low as 104, and once to 103. This continued up to the sixty-ninth day, when the temperature dropped to 99, following a chill, but soon to return to its old haunts, 108 to 110. This high range continued until the eighty-sixth day, when at 3:20 A.M. it registered 98, but again went back to 107.4, which continued until the ninety-third day, when she became dissatisfied and asked permission to leave the hospital, which was granted.

She left with a temperature of 104.8 and walked with slight assistance to the street-cars, three squares away, but on the evening of the same day she returned slightly intoxicated and asked to be readmitted. Her temperature was then 97.4. On the second day after readmission her temperature was 108, on the third 110, on the fifth 112.4, on the sixth, A.M. 97, but at 1:20 P.M. was again at 111.2; on the seventh 97, but on the eighth was 108, at which time she was sent out of the hospital, 101 days after her first admission.

She went to the home of her former employer, where she remained for about ten days, going about the house, and occasionally going out. On attempting to alight from a street-car she broke her ankle and was sent to a hospital. Her improvement has been continuous and her temperature has never been above 99.4 F. Usually it has been normal. In the first hospital her rest at night was very much broken. Sometimes she would sleep all night, at others lie awake until 3 or 4 o'clock in the morning. If the interne not in attendance on her would administer her hypnotic she would be likely to lie awake all night watching for "her doctor," to find out whether the

medicine was correct. Seemingly, the hypnotic administered by the wrong person destroyed the hypnosis. If she were piqued or worried the temperature would rise. At times when she was perfectly quiet, skin cool, pulse normal (or almost so), her temperature would be highest. These temperatures were



taken with both fever and bath thermometers, under the tongue, in the axilla and in the rectum.

During this period of hyperpyrexia she could sit up in bed, at times on a chair, and she always expressed herself as relieved and rested afterward. At times she was led about the room, which seemed to have more effect on her high temperature than drugs.

Like all the Celtic race, she was very much afraid of dying, and when most agitated her temperature was highest. After a talk with her, an examination, or a pretense to such, and an assurance that she was better, her temperature would usually lower. One nurse she disliked, and her presence would aggravate her fever.

Query: What was the disease in the two cases reported? My diagnosis was hysteric hyperpyrexia. The tender joints in the one, and the tender spine in the other, were hysteric symptoms, rather than rheumatic or meningitic. The emotional centers were so overburdened or exaggerated that the heat centers were completely overpowered (paralyzed), the radiation possibly interfered with, consequently the heat storage. Specimen sections of temperature chart give an idea of extreme fall and rise.

DISCORDANT SOUNDS A MENACE TO NERVES.

Presented to the Section on Neurology and Medical Jurisprudence, at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver, Colo., June 7-10, 1898.

BY JOSEPH A. GUTHRIE, M.D.,

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The reason for selecting this subject is because of a number of inquiries made to me personally, regarding the why and the wherefores relative to it; and as in some instances I was at a loss for ready answer, it behooved me to place my theme in the hands of those whose learning and experience I am sure will help me out of a quandary, rather than turn a critical eye upon

it, and so, by making public their demands my inquisitors may benefit.

It is needless to record statistics in speaking of this every-day evil whereby our tympani are assailed, and which by becoming inured deceive us into believing there is no particular harm done. Even though statistics were brought forth, what objections might arise to the statement: "noises create a disturbance of the nervous elements to the degree that they are vouched a place in the category of causations of disease." Therefore, it is the object of this paper to reason from pure observation, and attempt a clear analysis for the judgment of the profession, as to whether the above statement is worthy of consideration, and embody in its entirety a question answerable by that same honorable body. Then let us lay down for consideration some instances in our experience: certain mental records which have sunken into the fertile lands of our memory, making their impressions accordingly. To begin, shall we admit that when a healthy condition of the nerves exists, the greater amount of nervous shock we bear with impunity, but by frequent repetitions the less able are we to withstand the resulting jar.

We have acquired from nations now fallen into decay and almost, if not entirely, obliterated, an intuitive knowledge of many of our present customs, not to mention the suggestions and realizations of innumerable arts, inventions and sciences, so useful to mankind. These customs we adapt unwittingly, as new wants present. Relative to this instinctive tact of man, should we go further—beyond the human—is it not observed in a few peculiarities, that even the lower animals lend their aid in suggesting means to us? Call to mind the quail when disturbed in its foraging: by the suddeness of flight, by the noise of its wings in rapid vibration, it will disconcert the disturbers. If the enemy is startled the birds escape; some of us in our maiden attempts afield may have been vividly reminded of this, if we forgot to use our fowling-piece before the game was beyond gunshot. Prior to long-distance warfare, a pretty successful scheme (shall I call it bluff) was in vogue among the Chinese, which upon the superstitious children of ignorance, played a prominent part in enhancing China's length and breadth. These people calculate upon fright as a means of conquest, thereby saving the lives of friends and foes alike, at the same time gaining the end in view. A bloated, elaborately painted wind-dragon, then may account for Chinese supremacy and their populous empire. The tiger roars, so it is said by some, with his leap upon the exquisitely high-strung fawn, thus gaining a moment's hesitation, and before the prey is in motion his talons grip its tender flesh.

For no rhyme or reason, in these modern days, with every new invention there accompanies a new noise, so to speak. The snorting, bellowing locomotive engine replaces the musical post-chaise; the screeching, whistling steamer has supplanted the galley and the sailing craft, teeming with romance. And with the explosive fire-arm comes an innovation upon the bow and arrow. The ancients may not have been so cleanly, but they certainly were less noisy. I was told when at Gibraltar that during target practice and drill with the great guns, the loss in frangible property amounts to not a little sum; and I may instance a dozen other experiences wherein noise—and not a woman—was at the bottom of misfortune. I once knew an octogenarian farmer, who, when asked why he did not take a lantern in traveling over lonely roads at night, replied that he carried a pistol, which would give him light if needs be in case of attack; he evidently did not wish to attract attention to himself unless waylaid, and then he had light and sound stowed away ever ready. In certain land-locked harbors I have heard the inhabitants complaining of tugs and other noisy boats blowing off their whistles, especially those known as calliopes. The would-be waggishness, or to-what-purpose desire of these tug captains, deserves a compensation suited to the perpetrator. Have not the cartoonists discovered the tired and irritated visitor from the provinces, racking his brains in the uproarous city, unable to collect his faculties; and has the father, nightshirted and capped, marching the colicy infant in the small hours of the night, escaped this artist's humorous vein? Little mirth it would be if the tables were turned, were it possible to do so. All these things call to light the necessity for a scientific investigation of the question of useless noise.

In a few cities it has been proposed passing an ordinance against the ringing of church bells—this may to some disturb the "day of rest"—but why not include in this an ordinance for week days: the shouting of street hawkers, the clanging of other varieties of bells, the steam whistle of the factory, and last but not least, our young vender of the daily press, with his shrill tenor announcing the never-ceasing "extra!" How much better is the silent signal, both in war and in peace; take the popular foot-ball game and we find that the teams under better control are those who have mastered the silent signals of command. One reason the modern war vessel is so deadly, may be said to be because it is absolutely as accurate as a floating battery can be; and is not the cause of this accuracy due in great measure to the silent commands sent from the conning-tower by the captain to each of his subordinates, shut off from him and each other by walls of steel? When an order is indicated upon a dial manipulated by electric transmission one receives the same in a tranquil state of mind; but if the order is shouted at him by one, two, three or more in rapid succession (as of yore), then there is excuse for confusion in carrying out commands. In this treatise a good deal is left to the imagination, and my theme, I must admit, is undeveloped; so I beg much leniency for my awkward manner of launching it forth on a scientific basis, and ask those interested most to consider it as merely an advance guard for a subject worthy better forces.

MORAL INSANITY IN INEBRIETY.

Presented to the Section on Neurology and Medical Jurisprudence at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver, Colo., June 7-10, 1898.

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The term "moral insanity" is applied to a class of symptoms about which much difference of opinion exists. Formerly this was a veritable battle-ground between metaphysicians and alienists, but latterly this has subsided, and the questions now in dispute are differentiations and exact meanings of terms. I shall limit my study of the subject to certain well-marked symptoms which, taken alone or associated with other symptoms, appear to have the same signifi-

cance. Moral insanity is marked by a low sense of right and wrong, and by conduct which does not recognize the rights of others, or duty and obligation to any one. The ethical sense and consciousness of the relation to others, of truthfulness, of honesty, of respect for the good and true, for law, or for the opinions of others, is enfeebled or wanting altogether. Such cases may not exhibit marked intellectual weakness and may appear to have average judgment and discrimination in the conduct of affairs; yet have no moral sense of obligation to do right and to be truthful and honest to others. Such men are intriguing, deceitful, dishonest, taking advantage of every opportunity to gratify their most selfish desires irrespective of all consequences to others. The higher levels of cerebral development, which are the altruistic sentiments, the capacity to recognize and adjust conduct to the general good of all, are wanting. What is called character motive, purpose in life, or the morale of the man, his relations to others, are all the last formed elements of brain growth. Insanity, which is confined to these psychic centers, is well established. Without doubt other parts of the brain are affected, but they do not appear, except from a careful study. I think it also well established that sudden changes of character are always due to changes in the organic activities of the brain centers. It is asserted, and defended with many good reasons, that consciousness is an element of the brain which recognizes the higher relations of right and wrong, of duty, and all the higher psychic claims of justice and truthfulness and the relation to our fellow-man. The higher this development the stronger the man, and its absence or feebleness approaches imbecility. The general term "character and morale" describes this best. A veritable insanity in which this part of the brain was the most seriously affected has been described over a century ago. All the authorities recognize it but attach widely differing importance to its meaning.

Cases like the following are not uncommon, and probably illustrate this condition more clearly than by theories: A. B., a physician of average ability, culture and good character, with an excellent reputation for honesty and sobriety, began gradually to be untruthful, intriguing and dishonest. He made out double bills and denied payment even when his signature on receipts was shown. He exaggerated his business, drove his children away from home, was cruel to his wife and tyrannical to every one under his care. This increased and was not associated with any apparent intellectual changes. He was not passionate or emotional, but cool, and gave no explanation for his conduct. He became involved in forgery and assault, and died before the trial from some heart failure. This was moral insanity in which the physical basis was not recognized.

In inebriety these symptoms of moral defects and insanity are common, no matter what the conditions and standing of the person may be. It seems to follow the poisoning from alcohol inevitably, and in some cases very markedly. Two classes appear very prominently, one with heredity and the other apparently acquired. Wherever there is a marked history of heredity, of alcoholic parents, or of neurotic degenerate ancestors, a feeble or deficient consciousness of right and wrong is found. Alcohol used continuously retards growth, diminishes vitality, and prevents development. Drinking parents have deficient vitality and are unable to transmit to the next generation full normal vigor. The last and highest formed element of brain power—consciousness—is the first to suffer from alcohol. Hence drinking parents can not have children with full normal consciousness. This faculty will be wanting or very feebly developed. This is the rule to which the exceptions are rare. This defect may be associated with much intelligence and intellectual capacity and power to cover it up.

A man prominent in the political world is in private life devoid of all sense of justice, of right and wrong, and duty to others. He is untruthful and dishonest, and when his own interests are in conflict, will sacrifice any person or principle to gain his ends. He is of unsound intellect, yet able to pose behind a mask of honesty often acting honestly and talking of duty, but always from the most selfish motives. He is married, has a position in society, but keeps mistresses, and is open to every suggestion that promises his personal and selfish gratification. His parents were wine-dealers and drinkers, both of them waiting on customers over the bar. Only one child grew to manhood, and entered politics as a trade. He is temperate, but a moral paralytic, or a moral maniac with capacity to conceal this condition. A man who became one of the great swindlers and forgers of the day, but who was able to keep out of prison by intrigue and cunning, came from drinking parentage. To his associates he is known as without any sense of duty and obligation to any one and is a literal Bedouin.

That these conditions are due to inheritance is apparent from the following: A boy with excessive drinking parents was taken in infancy and educated in the most careful way. All the higher faculties were cultivated to an unusual degree, and he entered the church as a brilliant clergyman. He was found to be untruthful in regard to himself, suspicious of others in matters of personal reputation, and grasping even up to the border of theft on many matters. The collections in the church had to be kept out of sight and always suffered if they passed through his hands. He became involved in spreading scandal, and seemed oblivious of the danger of such conduct, and broke up the church by his irregularities. For ten years, until his death, he was in continual trouble with every church he was associated with. Here the evidence was clear that he had inherited defective consciousness, which no training or surroundings could overcome.

In cases where inebriety has been acquired by accident, contagion, surroundings and conditions of living, these moral insanities vary widely and are not so general, but are confined to particular things. In one case excessive untruthfulness and dishonesty in all business relations was associated with sympathetic tenderness to all his associates. In another, intense suspicion and doubt of the honesty of others was associated with excessive desire to be truthful. Another was excessively immoral, seeking opportunities for sexual intercourse at all times, was hysterically religious and anxious for the conversion of the world. Another was intriguing, secretive, treacherous and uncertain in his talk and conduct, and yet lived a moral, upright life. These are almost infinite in variety and manifestation, and all show profound changes in the moral faculties. The more common forms are illustrated in this case: A. B., a business man of good reputation and standing in the community, began to drink after a protracted illness from typhoid fever. Two years later he was an inebriate.

His mind continued bright and clear, but his character had changed. He was deceitful, suspicious and slanderous. He thought his sons and clerks were robbing him and that his wife was in league with them. He had his books examined by an expert and was in doubt when they were found correct. He told falsehoods about his business and family, and grew more and more egotistical about his mental capacity to reason and decide on all matters. He was harsh and tyrannical to his wife at times, lost all pride of character in the community and sense of duty to others. He was exacting to have anything done for his own interests, and oblivious of others and their feelings and tastes. As a patient, he was intensely selfish and grasping, even up to theft; was fawning and obsequious, promising everything and doing the opposite. He imagined evil of every one and told malicious stories without any foundation, then denied them. He was always reporting others as doing wrong, and supposed every one to have only the basest motives. He stopped drinking, but thought all others drank and concealed it. This man left the asylum and is yet sober after some years, but is morally insane.

In a general summary of the common symptoms following the use of alcohol, untruthfulness, or a low respect for their word, is most prominent. A man who previously took pride in the correctness of his promises and statements, will become indifferent, promise anything, make any statements, whether true or false. A man previously honest and trustworthy will be found doing dishonest things, cheating persons, taking advantage in little matters, and failing to act fairly in the interest of others. Then follows suspicion of motives and conduct, doubting the honesty and purity of persons. This deepens into delusions of intrigue and deception of others, extreme pessimism and doubt of everything, or a state of mind which may be called "combative erythesiasm" follows, in which the distress of others is pleasing. This is manifest in malicious criticism and scandal, pointing out faults and magnifying them, apparently enjoying the knowledge of the dishonesty and malice of others and the irritation which follows from the publicity which they give to it. Sexual conduct is without restraint; the ties of family and duty become less and less; intense personal selfishness to gratify every impulse at all expense follows. The taste for gambling and speculation becomes a morbid impulse, often to retrieve their waning fortunes. Recklessness in the use of money, throwing it away without motive or purpose; or extreme parsimony to hoard it, and grasping selfishness, equally unseasonable, are common. As in other insanities, exaltation of the *ego* follows, and intense confidence in themselves and their power of reasoning and ability to do anything possible is present.

Many persons who exhibit all these symptoms appear to be but little changed in other respects. They carry on business, seemingly make plans and execute them, and appear to casual observers the same. These insanities seem to concentrate into particular lines or ranges of thought. Consciousness of truthfulness may be almost entirely absent, and in other respects appear the same. Moral recognition of the higher truths of faith and trust are gone, yet he may act sensibly and be a church member. In one case an inebriate lawyer doubted the honesty of every one and thought no one was pure or had good motives, and yet he acted on what seemed the opposite. It was surroundings alone that held him; the restraints of society covered up an insanity which only needed a favorable opportunity to break out. In another case, a teacher who had drank many years, became a secret thief, purloining everything which he fancied, and when likely to be detected, restoring it in some mysterious way. He appeared and talked honestly and yet when not observed took advantage of every opportunity to appropriate anything that came in his way. A number of cases of inebriates have been reported where this kleptomaniac impulse took on certain peculiar forms. Thus one man when drinking stole bibles, another jewelry, and when discovered gave it up freely. One man stole washtubs. A woman inebriate always took aprons and towels; another man stole soap, and so on. The most unusual and unreasonable things were taken, concealed, and given up freely without any sense of the nature of the acts. One class of inebriates exhibit this insanity in malicious slander, another in extreme suspicion, another in vindictiveness to resent real or imaginary evils, another in immorality and impurity of act and thought. Many of the chronic cases exhibit all these phases in one. The oft-repeated expression that "inebriety is criminality" is true in a general sense, when criminality is understood as a course of conduct in which duty, right and obligation to each other are ignored. The inebriate has physically defective senses; he is not able to adjust himself to the outside world correctly, because his knowledge of their relations is imperfect. His power of reasoning is also deranged, because the impressions from without are faulty and the integrity of the normal action of the nervous system is impaired. The coarser lesions are well recognized and can be traced in all cases. Beyond this, conduct indicates the higher moral defects and changes. Psychical changes, as loss of pride, of character, of honor, respect for the truth, of duty to others, low motives or no motives, extreme pessimism, are the first and common changes which lead up to criminal acts. The paralyzing action of alcohol is first seen on the moral brain of consciousness; in the dullness and defective workings of the higher functional activities. The changes observed when a man is under the influence of spirits, is vaguely called the removal of the restraint of reason, and dominance of the animal impulses—the brute triumphing over the real man. In reality it is palsy of the consciousness, a cutting off of some part of the higher brain, and consequent confusion of the lower brain and its workings. Impressions and their meaning are confused and obscure; the higher relation of events and conditions of life are unrecognized. It is asserted that 3 per cent. of all persons born are without normal consciousness of right and wrong and their relations to others. They have retarded brain development. The part of the brain which constitutes the moral control or consciousness of the higher duties is wanting or undeveloped. Such persons are defectives, and insane in the general meaning of that word, and like dements, are incapable of normal healthy adjustment to the relations of life. When an apparently normal state of this brain function has existed and then a great abnormality follows in thought, word and conduct, disease is present. Comparison of the conduct and character of inebriates before alcohol is used and after they become habitués, brings out some startling facts that are unrecognized.

From the lowest type of a demented inebriate on one side to the moderate drinker at meals and the fashionable clubman, there is a distinct relation and chain of cause and effect. The clear moral insanity of the one is traceable to the other without any sharp dividing lines. The moderate drinker and clubman who proves to be the defaulter, or who is involved in conduct that is criminal, or who becomes a principal in crime, is suffering from disease differing only in degree from the degenerate inebriate tramp. Moral insanity is a very prominent phase of all inebriety. Its absence in any given case is always an exception to the rule. A man with a high moral development, after he becomes an inebriate may retain the form and externals of his previous character. He may be more emphatic in his display of some qualities, such as religion, truthfulness and duty, and yet in other matters be oblivious of all obligation and duty. One such man, who prayed for inebriates and lectured on temperance, carried on an intrigue and sold his influence to the highest bidder. Another man acted as an agent for the sale of stolen goods, and at the same time carried on a great reform revival; and another was engaged in gold mine swindles, while lecturing every night for temperance. The moral insanity was called hypocrisy and in a legal phrase was malicious, criminal and vicious. In reality it was degeneration and disease, the breaking down of one part of the brain while the others remained apparently clear. In our Civil War a noted general was drunk to excess at times; previously he was noted for his hearty frankness and honesty, but was found unreliable, intriguing and failed when needed most. He showed petty weaknesses and untruthfulness, with malice that was unknown before in his character. He finally died a moral wreck after the war was over, having become almost criminal in his thoughts and acts. A clergyman became a secret inebriate and later became involved in a low intrigue and was turned out of the pulpit. He was insane, his consciousness became palsied and for a time he taught ethical truth automatically. The possibility of one part of the brain being affected and the rest doing normal work, and this condition being concealed, is a reality which every experience confirms. The very close relation of one part of the brain with the other makes it impossible for health and disease to exist together, and yet moral insanity may be present and be concealed from general observation. A study of conduct will reveal it and a comparison with previous conduct will show its growth and development. The inebriate who has lost pride of character and sense of duty and obligation, truthfulness and honor, may seem to be the same in many ways for a long time, but sooner or later this moral diseased condition will spread and his whole organism show degeneration. I shall conclude this brief study with the records of two cases which have occupied public attention and been the topic of bitter discussion.

Case 1.—John Blank. Father was a strolling actor of irregular character and an inebriate. He married a woman of average ability from a good family. The father died before John was born and two years later his mother married again. John was brought up with great care and tenderness. His later education was of the best character. He was a leader of his class as a scholar and an athlete. To his mother and intimates he displayed an intense selfishness, putting his interests and desires above all others, and had no consideration of the pain and distress of others. He was cruel in his conduct to any one who was in his way to the achievement of any purpose or desire. He finally became a lawyer and was thoroughly unscrupulous in money matters. Although not miserly or avaricious, as a politician he was without honor or pride of character and would stoop to anything to accomplish his purpose. He married a rich woman and soon after swindled his father-in-law and possessed himself of a large property. Then he drank and began to live a fast life, had a mistress, attended horse races. Wherever he went he swindled and falsified and was feared by every one who had any dealings with him. He went into stock gambling and was swindled and swindled others. To his wife and children he was cruel and violent in his conduct. After a period of excessive use of spirits, he killed his wife and made no effort to conceal it, or run away. On the trial his schemes for deception and fraud were revealed to the astonishment of every one. Truthfulness, honor, duty, and all the qualities which go to make character were absent. He was convicted, but the sentence was commuted to a life imprisonment. In this case moral idiocy was inherited. The higher part of the brain was undeveloped and beyond the reach of culture and education. Without culture he would have early sunk to a low tramp criminal and burglar, and been a pauper degenerate, dying early. With culture he became a higher grade of criminal, and yet he was unable to appreciate ethical truth or moral relations. He was insane from birth: alcohol intensified and developed this condition. The insanity was of the higher ethical brain, and concealed except to those who knew him intimately.

Case 2.—The second case came from a good family and was normal in all his relations to others. Was truthful, honest, and seemed generous and very kind. After a severe attack of typhoid fever, in which he was given large quantities of spirits, he began to use alcohol daily. His father died and left him in charge of a large business interest. His character changed. His regard for his word was lost. He was suspicious of his mother and brothers, and took money out of the business and concealed it. He left his home for a hotel, and when drinking excessively, wrote violent scandalous letters to his family and employes. He associated with low women, but treated them harshly, refused to give them money, and was constantly in trouble. No public exposure disturbed him. He was frequently in court for petty swindles and refused to pay unless forced to. His business declined and was finally taken out of his hands, and he became a low blackmailer and beggar, drinking at all times and places. He was examined for lunacy and decided to be sane. No symptoms of insanity were found, nothing but wilfulness and vicious cunning, was the opinion of Philadelphia experts. Finally he was convicted as an accessory to murder and incendiarism, and sent to prison for life. This was clearly moral insanity acquired. His family and early history showed no trace of defective consciousness or moral weakness. His parents were temperate, moral people, church members above all suspicion. In his early life he attended church and Sunday school, and was a lovable, attractive character. He began his business career with his father, and seemed in every way most honorable and honest. He displayed excellent judgment and was intrusted with large business interests which he faithfully executed. During the illness from typhoid his father died, and on his recovery he was put in charge of the business. A total change of character which followed his recovery might have been due to the spirits given, or the injury of some local center from the fever. At all events, the use of alcohol intensified and fixed this condition. In both of these a great deal of mental vigor and superficial sanity was associated with this low moral brain force. The experts could find no impairment of his reasoning and memory, and concluded his conduct was simply vicious.

In the first case immoralities and dishonesties of conduct were judged from the same point of view. To these experts, failures to observe the relations of right and wrong, duty and obligation, had no physical basis, and were mere psychic temporary lapses. The use of alcohol was accountable for this and as this could be stopped any moment, it was a condition which the person could control at will. Fortunately such views are but the survival of theories of long ago. The central point I wish to emphasize is that moral insanity follows all use of alcohol, and is present in all inebriates to a greater or less degree. This condition is inherited and acquired, and exists to a far greater extent than would be supposed. There are many excellent men who use spirits not to a great excess, who are sufferers from disease. The constant beer and spirit drinker will be found to present the

most numerous examples. This field of study will furnish defects and degenerations, which follow the same uniform laws as other more apparent lesions.

SOME MEDICO-LEGAL ASPECTS OF SENILE DEMENTIA.

Presented to the Section on Neurology and Medical Jurisprudence at the Forty-ninth Annaul Meeting of the American Medical Association, held at Denver, Colo., June 7-10, 1898.

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Perhaps the most marked feature in the relations of Law and Medicine which has become prominent within the last twenty-five years, is the tendency to "break wills," or contest them upon the ground of mental unsoundness; said mental unsoundness being usually attributed to the advanced age of the testator which the medical expert—being compelled to give a name—denominates "Senile Dementia."

It is not likely there are more old persons making wills, or that senile dementia is on the increase, and our query is: Why has litigation on this ground become more frequent than it was a half century ago? As our laws pertaining to wills have not changed, and as the disease—so-called senile dementia—has not changed, why is that about nine in ten wills made by wealthy persons are subject to litigation, and the wealth earned by the testator, which was as much his own as his watch or his jack-knife, is diverted from the channel indicated in his last request, into the pockets of the attorneys, primarily, and, occasionally—some of it—to the account of his unworthy and remote relations?

From careful observation extending over thirty-six years, I am of the opinion that the change referred to is largely due to a degeneration in the character of the Bar, and a decided weakness in the character of the Bench; attorneys who instigate litigation, and ignorant judges who sum up the evidence without knowledge and deliver weak opinions. Then, we have another cause: Our form of government; our system of education; and lack of that religious and moral training which teaches filial respect, gratitude and love for parents and benefactors.

Still another reason for breaking wills is the inadequacy of the statutory laws in most, if not all, of our States, to protect the wishes of the testator, and that the question of mental unsoundness is submitted to a jury of men totally ignorant of the whole subject of mental phenomena either in health or disease; and their knowledge of the case presented to them can only be gained through the tortured and tortuous examination and cross-examination of most ignorant men, women and children who are called as witnesses; and then, to complicate the matter, there are the lawyers for the prosecution and defense, who have gained a hurried something of senile dementia from some text-book—usually written by one not a professional alienist—and have a shallow knowledge of "will-making power" gleaned from theoretical essays, or works on medical jurisprudence written by a lawyer. All these causes are in constant action, and combined, produce those astonishing and unjust verdicts of "mental unsoundness" which are so commonly returned by juries in "will cases," and which are so encouraging to all the relations of a testator to the third and fourth generation. Then there is the judge—the thirteenth juryman—ready to estimate the value of the evidence, and also to give opinions and rulings. And yet, for a judge to translate, so to speak, the evidence in a case of insanity of any form, would require a knowledge of anatomy and physiology from the moment of conception to the period when the will was made, or the crime committed.

So much for the legal side of my subject, for the medical side cuts but a small figure. There are two kinds of medical experts. The first and largest class are professional experts. I mean those who will take a fee and appear before the jury for either the prosecution or defence—whichever will pay the most—as expert witnesses, in cases involving the most intricate knowledge of the chemistry of poisons, in surgery of all kinds, obstetrics, mental and nervous diseases. And there are experts well qualified, who are honest, but who are hoodwinked by the attorneys on either side to consent to a condition presented to them in a hypothetical case. Now, unfortunately, attorneys are not sworn to tell "the truth, the whole truth, and nothing but the truth," and the expert is employed according to his expressed opinion. The methods employed may be strictly legal in form, but the introduction of witnesses of fact, and of medical witnesses who are not alienists by profession, and of expert witnesses, almost forbids an appreciation of the truth as to the testamentary ability of the testator. No matter how great their ability, their value to the jury as a means of determining the mental condition of the testator is absolutely nothing more than the confusion of tongues in Babel.

The expert witness is not allowed to form an opinion from the evidence given by the witnesses, and thus explain to the judge and jury the value of the symptoms for or against the testator's mental soundness; but the expert witness must listen to a hypothetical case, yea, not one hypothetical case, but two, and from these hypothetical cases he must form and give a direct opinion as to the testator's mental condition. Now when we consider the fact that the attorneys are but playing a game of hazard, as much as a professional gambler does in a game of "draw poker," we can see how absolutely valueless the expert testimony may be made. The experts for the prosecution and those for the defense are pitted against each other as cocks in a cock-main—an expert acid and an expert alkali neutralizing each other.

I give as an example of legal logic, and how the medical expert is handled and compelled to swear falsely, the following: After the direct examination by the prosecution the expert is handed over to the defense. After again answering various unimportant questions as to former history, etc., the defense begins: "You have sworn that the animal in question that ate the cabbage was a rabbit. Now we wish you to listen to a hypothetical case: 'An animal was found eating the grocer's cabbage; this animal was of white skin with black spots; its hind quarters are slightly higher than its fore quarters; in movement it either runs, walks, or leaps; it has two eyes, and two ears, rather long, slightly pendent. It is predatory in its habits and a ruminative animal; it devours clover, grass, cabbage, etc.' Now, Doctor, with these facts as presented in our hypothetical case, is not this animal a goat? Answer my question." "Well, it might be either" answers the expert. Then the defense howls, appeals to the judge in a heated little speech for the benefit of the jury, and shows that the witness is either stubborn, or so ignorant that he does not know

a rabbit from a goat. Then the expert is finally pinned down to "no" or "yes," and he has to swear that which he knows to have been a rabbit was a goat. Then, when the defense gets its case on to the expert for the prosecution, said expert acknowledges that a goat is a rabbit, and the paid experts are arrayed against one another like champion football players, but the result is usually without effect upon the ignorant jury, or upon the judge.

The difficulty in the matter, when senile dementia or incapacity is made the basis of a suit, rests in the misapprehension that senility is insanity, whereas it is but a condition wherein the mind of aged persons no longer records new ideas, and has forgotten many old ones. It is a change, physiologic in character, that would come to every human being should the vitality of the heart and assimilation of nutriment continue long enough. The physical and mental activities are retarded and limited, but the memories stored up in the mind's great granary are rarely destroyed. An apple may have a speck of decay, and yet have much perfect and palatable fruit.

Bachal's description of old age shows a condition where life's beautiful sunset is pointed at by unprincipled lawyers and avaricious heirs as a black and bursting storm-cloud of disease: "Seated near the fire, and concentrated within himself, a stranger to everything without him, he passes his days there, deprived of desire, of passion and sensation. Speaking little because he is determined by nothing to break his silence, yet happy in feeling he still exists when almost every other sentiment is gone." To the physiologist it means diminished blood supply through an atrophied brain and changed qualities of blood through imperfect nutrition. The quality of the blood which is required for renewed mental activity is yet rich enough in vital principle to brush the dust from the pictured memories within the brain cells. This is senility. To entirely wipe out the images and thoughts etched upon the tablets of the minds of the aged is senile dementia. Now, there is a period where the transition is so slow from the former to the latter that it is extremely difficut for the laity, the judiciary, or even medical men who are not alienists, to determine the mental capacity of the aged subject. I would suggest and assert that where an individual owns property which he has acquired by his own efforts, and is able to describe that property, and knows to whom he wishes to convey it, that person, no matter what other mental deficiencies may exist, is of sufficiently sound mind to devise and will such property to whomsoever he may desire.

The gradual failure of the special senses by which all knowledge has been obtained deceives the unprofessional observer; the defective vision, the deafness usually associated with old age, disable the individual from participating in the social life about him, and with the fading brilliancy of the eye, the arcus senilis, and relaxed and atrophied lower jaw, give to the individual a peculiar stupid and demented expression, yet such person, properly addressed, will display that he has not yet ceased to think with some degree of accuracy and vigor. "The latter fact," says Ray, "will be known only to his intimate friends, while his defects are noted by common and occasional observers, who are always ready to decide upon a person's mental capacity from an occasional glimpse of his manner, or a few remarks upon most ordinary topics." Every physician knows that there are many old persons who display lack of memory; many miscall names and do not recognize at all times—perhaps from imperfect vision—persons whom they have long known, yet, when the subject of property is touched upon, or their business interests mentioned, they understand perfectly well, and converse upon business and family matters with perfect understanding.

One of the greatest evils of our system of dealing with will contests, where the allegation is that of senile dementia, is that the trial is before a jury who know that the expert testimony upon both sides is paid for, and that the evidence given by experts is based upon hypothetical cases, and even a very ignorant jury would note the great discrepancy between the wily lawyers' hypothesis and the observed facts as related by the most ordinary witnesses. It is astonishing to note with what perfect ease the most stupid, ordinary, ignorant man, woman or child can calmly diagnose these cases which would puzzle the most proficient scholar in psychiatry, and by their testimony put the most expert alienist to shame before the jury. In a recent trial in Indiana, conducted by the most prominent attorneys in America, a will was thrown out upon the jury finding the old man who dictated it was of unsound mind. The following, in brief, is a sample of the evidence:

Witness (a negro barber) says "Mr. X. went to sleep while being shaved; when roused up looked kind of wild and confused."

Attorney—"Do you believe Mr. X. was of sound or unsound mind?"

Witness—"Unsound."

Newspaper boy—"Have seen Mr. X. often; sell him papers; he had tobacco spit in the corner of his mouth; looks like he don't know nothin'."

Attorney—"Do you think him of sound or unsound mind?"

Witness—"Unsound."

A farmer's testimony was that when the testator visited him he put his horse with others in a stall, and when he, the testator, was going away, he went into the wrong stall and put the harness upon the wrong horse.

Attorney—"Do you believe Mr. X. was of sound or unsound mind?"

Witness—"Unsound"—notwithstanding that the stable was dark and the testator could see, at best, but imperfectly.

A physician noticed Mr. X. at the postoffice; his trousers were not closed. "I whispered the fact to him, but he went on without correcting the impropriety." (X. was deaf as a post.)

Attorney—"Do you consider the man of sound or unsound mind?" "Witness—Of unsound mind."

It was proven that the testator frequently forgot the names of persons; lost his locality at times; repeated the same things over. It was also proven that up to the time of making his will he kept accurate written account of all his business and financial transactions, and wrote most sensible and affectionate letters to his children and grandchildren—those children who, although left in affluence, rushed into court to put the stamp of insanity upon him ere the grass was grown over his grave. Thus, through the ignorance of the "thirteenth member of the jury," most ignorant witnesses were permitted to give expert testimony; were boldly encouraged to pronounce upon the physical condition and mental capacity of a person they hardly knew.

There is no standard by which mental capacity can be measured by the courts, and judges take to themselves the grave responsibility of deciding questions upon which they are as ignorant as they are adverse to one another. So uncertain are the judges, that they command neither the respect nor the confidence of the people, and are therefore shorn of the moral force and influence that properly appertain to judgments of courts.

The following will illustrate the views of a few eminent jurists upon the general subject of insanity:

"General insanity would necessarily preclude a trial, as a person in that condition can make no defense whatever."—Beardsley, C. J.

"That you are of unsound mind I believe, but that is no reason why you should not be punished as an example to others."—Bramwell, B.

"To execute an insane person is against law, and of extreme inhumanity and cruelty, and can be no warning to others."—Sir E. Coke.

"To relieve from responsibility, insanity must be absolute; a man must know no more than an infant, a brute, or wild beast."—Tracy, J.

"Absolute insanity not necessary; if the prisoner was insane with reference to the crime charged, it is sufficient."—Beardsley, C. J.

"It must be clearly shown that the accused did not know right from wrong. Partial insanity no bar to responsibility."—English Judges in Conference.

"The preceding opinion designated 'exquisitely inhumane' and absurdly impracticable."—Ladd, J.

"The test lies in the word 'power.' Had the accused power to know right from wrong, and had he power to adhere to the former and avoid the latter?"—Brewster, J.

"The law does not recognize 'uncontrollable impulse' if the prisoner knew right from wrong."—Alderson, B.

"There is an uncontrollable impulse, or irresistible inclination to kill, which, when proved, relieves from responsibility."—Gibson, C. J.

"If he knew that he was committing an act against God and nature, he is responsible."—Lord Lyndehurst.

"If the person acted under uncontrollable impulse, notwithstanding his knowledge, the act was not his act; hence he was not responsible."—Shaw, C. J.

"Moral insanity affirmed to be held a good defense by all enlightened jurists."—Robertson, J.

"Moral insanity denied as being a good defense, and the opinion that it was, declared to be most startling, irresponsible and dangerous doctrine, unknown to the courts of last resort in either Britain or this country."—Williams, C. J.

"If he did not know that the act he was doing was wrong, he is not responsible."—Tindal, C. J.

"If he knew that the act was wrong at the time he committed the deed, he is responsible."—Parke, B.

"The defense must prove absolute alienation beyond all doubt; such insanity as would prevent the accused from knowing that murder was a crime against the laws of God and nature, and that there was no other proof of insanity which would excuse murder or any other crime."—Sir James Mansfield.

"An insane man can not commit a crime. If there is a doubt of the insanity, how can the jury say a sane man committed the crime? A reasonable doubt as to insanity should avail as much as a doubt of any matter of fact."—Crawford, J.

"The onus of proving insanity is on the accused, and if left in doubt, the jury should convict."—Rolph, B.

"The onus of proof of insanity, as well as of guilt, rests on the State after the presumption of sanity has been removed by the defense."—Cooley, C. J.

"The proof of insanity to acquit should be as strong as the proof of guilt to convict."—Hornblower, C. J.

"If the jury entertain a reasonable doubt of insanity, they ought to acquit."—Doe, J.

"A preponderance of evidence in favor of insanity should acquit."—Shaw, C. J.

"Whether there is such a mental disease (dipsomania) is a matter of science and fact, not of law."—Smith, C. J.

"If he knew that the act was a crime forbidden by the law, he was responsible."—Lord Brougham.

"There are no legal tests of insanity. When the judge gives a legal test of insanity, he either testifies to a question of fact, or the expert witness has testified to a question of law. Thus the law is brought into conflict with itself."—Doe, J.

"The introduction of medical opinions and theories in the subject of insanity has proceeded upon the vicious principle of considering insanity a disease."—Lord Chancellor Westbury.

"Judges and lawyers, profoundly ignorant of insanity, have invaded the province of medical experts—the province of those who know all that is known on the subject—and for legal tests use exploded obsolete medical theories."—Doe, J.

"Ordinary men of the world are just as competent as witnesses as medical experts in insanity cases."—Bramwell, B.

"Medical experts are infinitely better qualified to judge of insanity than are courts or lawyers."—Ladd, J.

"Expert testimony not only of no value, but worse than that."—Davis, J.

"Expert testimony of great weight, and deserves the respectful consideration of the jury as competent evidence."—Shaw, C. J.

"The whole difficulty is that courts have undertaken to declare that to be a law which is a matter of fact. All symptoms and all tests of mental disease are purely matters of fact for the jury, and not matters of law for the judge."—Doe, J.

The constantly increasing litigation in America when questions of sanity and insanity are involved, demands some change in method and in law. Maudsley says: "It is notorious that the acquittal or conviction of a prisoner when insanity is alleged, is a matter of chance. Were the issue to be decided by tossing up a shilling instead of by the grave procedure of a trial in court, it could hardly be more uncertain." A celebrated British jurist says: "Acquittal on the plea of insanity is a mere matter of accident."

In one simple change of law much time and expensive litigation could be saved: 1, that the judge may only call upon experts to aid in translating, as it were, the evidence as given by the witnesses; 2, none but practical alienists should be called as experts in insanity cases. The general practitioner can not be an expert in insanity any more than a mechanical engineer could be an expert in the construction of a watch. The experts called by the court should hear all the evidence given, and not hypothetical cases of either side. Experts should be paid by the State or county, and not be allowed to take fees from either the prosecution or the defense.

When we have arrived, as we will in time, at that period of enlightenment, there will be less tendency to useless and unjust litigation; a man's property may be conveyed as he may devise; guilty persons will not be acquitted and innocent persons hanged in the sacred name of Justice.

SOME EXPERIMENTS IN URIC ACID—UREA.

EXCRETION BY THE KIDNEYS IN AN INDIVIDUAL UPON A MILK DIET, AND IN A CASE OF RECURRENT MELANCHOLY.

Presented to the Section on Neurology and Medical Jurisprudence at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver, Colo., June 7-10, 1898.

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PHILADELPHIA.

I. MILK DIET.

Before the Section on General Medicine at the semi-centennial meeting of the ASSOCIATION the writer presented a study of "The Rôle of Uric Acid in Neurasthenia and Allied States,"[1] and drew the conclusions from the investigation that uric acid and its congeners must be potent causes in many cases of neurasthenia and other like nervous disorders, or must again cause aggravation of essential cases. Since that time further experiments as to the knowledge

[1] Virginia Medical Semi-Monthly, June 25, 1897; Medical and Surgical Reporter, March 31, 1898.

needed of internal metabolism and the significance of the amount of uric acid excretion to such bodily disturbance have been carried out; and, as first suggested in the paper quoted, the quantitative determination of uric acid on a milk diet has been sought for.

Dr. S. Weir Mitchell kindly selected a private case of exaggerated subconscious-self (hysteria) and of mild functional nerve tire at the Infirmary of Nervous Diseases for my urinalyses. This woman we feel was but little away from physiologic functionation, her malady being largely loss of will power, of idiopathic etiology. This is mentioned so as to not be misleading and to thus assume very probably about a normal secretion and excretion of an average individual, which is the desideratum. Having her under control in a hospital carried out the ideal conditions for watching and testing carefully the effects of milk diet on uric acid excretion in health.

Mrs. F. B., age 40 years. There is a negative family history. Patient has always been physically pretty healthy, but very nervous. When young was subject to causeless, painless and bloodless attacks of vomiting. No rumination. Menstruation first began at 13 years, is regular; lasting about one and a half days; scanty, but not painful. As further evidence of her essential nerve weakness, we may mention neuralgic attacks at 33 years and of causeless irritable bladder, the urine being found normal. No reason can be determined for her not ever being pregnant. Her generative organs are normal.

Hysteric manifestations in an exaggerated form followed business cares and the nursing of patient's father and mother, some seventeen months before the time she came under treatment, Nov. 11, 1897. The vomiting attacks of childhood recurred and became a "habit." She ejected much mucus—never food. Sudden hysteric gastrectasia and meteorism, with final abdominal contraction and sequent gushing of gas from the mouth ensued; occurring daily at exactly 4 P. M.—a mental habit—for two weeks before she came under treatment. She also then had marked subjective and objective vertigo, although her hearing and ears were pronounced normal. There were hysterical syncopal attacks, and daily nervous chills, attacks of transient amblyopia, intense frontal headache and at night frightful dreams, with jerking of head to the right, the consciousness always being preserved, however. Has not walked alone these seventeen months from supposed hip disease—also a hysteric vagary. We examined her very carefully and as to the secretions, but could find no physical or chemic alteration in any organ, excretive or secretive. Her appetite was very good, and after the thorough régime of the full "rest" treatment, became ravenous, so that she had discomfort after meals, and the ingesta was therefore lessened. Her tongue was large, clean, flabby, tooth-indented. There was no abdominal distress, but slight pressure tenderness on palpation over right upper quadrant of abdomen, due to the gastric distention noted. On being put to bed our patient's weight was 134 pounds, her temperature was 98 degrees F., respiration 20 and pulse 92, rhythmic and compressible. She was at first placed on the regular "house" diet—a cereal for breakfast, with the addition of four "meat balls" daily and Nestle's food ʒiv in the morning on waking. Liquid malt ʒii was administered twice a day, and besides the usual general massage and faradism daily, phosphate of soda ʒss before meals and an occasional dose of spirits chloroform, gtt xv, acted well as laxative and carminative; while the useful pil. sumbul comp., t. i. d., was the tonic therapeusis in the case. Fl. ext. cascara sag., gtt xx, at night, followed by a warm water enema at 10 A.M. proved of value when constipation was annoying. Her temperature was usually slightly elevated after massage.

With this outline the uric acid excretion remained normal up to Nov. 27, 1897, when she was placed upon a skim-milk diet; at first ʒiv every two hours, gradually increased up to ʒviii every two hours, when a dram of lime water was added to assist digestion; then the amount of milk was pushed to ʒxii every two hours in the waking day. Some "fullness" in nape of neck was relieved by application of an ice bag daily, usually toward the evening hours. Isolation being insisted upon, we thus had, with Swedish movements added, an ideal rest with natural metabolism in an apparently healthy body, assisted by the passive exercise and absence in it of loss of nerve energy.

At the end of a fortnight the woman was gradually gotten up, at first fifteen minutes twice daily and increased five minutes at each daily sitting, as there was no necessity for prolonged rest in so actively hysterical a case, where true nerve exhaustion played so little a rôle. Dr. Thomson could find no adequate cause for headache in the eyes, and its irregular recurrence did not lead us to suppose it of metabolic origin. The following table (No. 1) gives the results of my urinalyses during the milk period and after, from Dec. 4 to Dec. 23, 1897, beginning after the woman had been upon milk alone for a week. The urea was also estimated upon a number of occasions. The amount of milk administered reached at its acme one hundred and twenty ounces, proving the normal metabolism of the system; for, too, there was at no time oxalates to make suspicious such suboxidation.

The method employed for quantitative uric acid determination was that of Heintz, previously detailed in my paper already quoted, and therefore (worked under similar conditions of examining the specimen at once) there can be but little fallacy in the findings.[2]

Taking the normal excretion of urea as 2.8 per cent. and of uric acid as .05 per cent. (i. e. 2.8 gm. urea in 24 hours, and 6 gm. uric acid in 24 hours—and 8 gm. NaCl in 24 hours) it is to be noted at the end of the week of milk diet the urea had fallen to 1.4 per cent. while the uric acid had lessened to .04 per cent., the amount of urine excreted varying daily from 20 to 30 cm. (2630 c.c.) as shown in Table I. The lessening of pigment was a notable point; also the reduction in all solids as shown by the sp. gr. gradually lessening from 1020 at first to 1012 at end of first week on the milk diet, to 1010 at the end of a fortnight. Now the urea had become reduced to 1.3 per cent. and uric acid to .03 per cent., so that very few crystals could be detected without centrifugation. The urine had now become very limpid, of a light greenish color, and contained practically no deposit, and reaching by the eighteenth day of milk diet without vacillation the lowest ebb in both urea (1.2 per cent.) and uric acid (.019 per cent). The uric acid continued to *recede* after eggs had now been added to the diet for 24 hours (to .016 per cent.); the urea *promptly* rising in the same time, however, to 1.4 per

[2] In a private communication from Dr. Chas. E. Simon, the kind suggestion to adopt the Hopkins method, "with the modification that you decompose your ammonium urate with a decinormal solution of HCl and retitrate the excess with NaOH, using dimethyl-acido-azo-benzol as an indicator, 1 c.c., corresponding to 0.0168 gm. of uric acid," will be used in future work.

cent. This we feel rules an excess of uric acid in this case out of court—a normal condition of body.

House (meat) diet was ordered on the twenty-second day, and the urea, which had then risen to 2 per cent., became less (1.6 per cent.), while the uric acid, which had the day before begun to rise, now took on more active production and elimination, reaching .03 per cent. on the twenty-second and .034 per cent. on the twenty-third day of experimentation, the urea coming slowly up to 1.8 per cent.; and on the twenty-fourth day urea reached the 2 per cent. mark, uric acid being .036 per cent. On the twenty-fifth day the urea remained at 2 per cent., while the uric acid tide had risen to 4 per cent., and on the twenty-sixth day the uric acid was recorded .046 per cent (about normal), while the urea was lacking 8 per cent. of normal.

This see-sawing in the relative proportion of urea and uric acid, while showing on the whole the tendency to lessening of both when proteids are cut off or bodily tissues are suboxidized, yet, as held in my previous studies, shows clearly enough that the ratio of urea to uric acid is not held at a fixed proportion, but that if one is *more* the other is apt to be *less*, no doubt due to the degree of oxidation in the process. Recent studies of urine have further legitimately proven that where there is much disturbance of metabolism in a given case, besides this urea-uric acid disproportion, oxalate crystals are more in evidence.

Now in the past year, since we have gotten a reliable quantitative test for indican,[3] we may yet hope for some reliable quantitative proportion test of oxalates and other by-products to uric acid; and that the therapeutic value of such understanding may further on in physiologic chemistry help our treatment of the dread uric acid diathesis.

5. Urea at the end of twenty-second day is 1.6 per cent., uric acid is .03 per cent.; diet again increased.

6. Urea at the end of twenty-sixth day back to 2 per cent., little less than normal; uric acid to .046 per cent., slightly less than normal. The patient's weight on Nov. 13, 1897, was 134 pounds, by the 27th excess of fat was massaged away to 132 pounds. Eleven days on a milk diet brought her up to 136½ pounds, and on December 25 it was 144½ pounds, on Jan. 8, 1898, 154 pounds, a gain of twenty-one and one-half pounds in forty two days.

7. Urine progressively decreased in amount when patient was taken off milk diet largely and solid food substituted. (Proteid food produces about half uric acid formed perhaps, the rest probably coming from body by oxidation; see No. 10.)

8. Specific gravity lowered in proportion to increase in the amount of urine excreted.

9. Color of urine lessened in proportion to increase in the amount of urine excreted.

10. It is here positively established that uric acid in the urine is reduced to a minimum on a milk diet (about one half the normal).

11. Trace of *indican detected on twentieth, twenty-first, twenty-second and twenty-third days after solid food was largely added (fermentation).

IN SHORT RECURRENT MELANCHOLY.

The following table (No. 2) is the detailed record of a case of irregular mental depression of short duration in the case of a man in otherwise excellent health, and whose case is detailed by Dr. Weir Mitchell,[4] to which very singularly interesting clinical record the reader is referred. The conclusions we reached from the examination of this middle-aged man's urine have been stated by Dr. Mitchell in his book, and I am again indebted to that gentlemen for permission to publish first here the details in tabular form, which are somewhat in accord with work done later by Dr. Cleon M. Hibbard,[5] and of the pioneer in uric acid studies, Haig, who refers to the same conditions.[6]

Our own experiments in states of mental depression are confined to the critical analyses in this one case

TABLE I.—URIC ACID FINDINGS (MILK DIET).

Date.	Amount, twenty-four hours.	Amount taken in ounces.	Specific gravity.	Color and sediment.	Urea, percentage.	Uric acid, grams to per cent.	Notes.
Dec. 4, 1897	83 oz. or 2490 c.c.	8	1012	Light straw	1.4	.04	End of first week on milk, 4 ounces (with 1 drav. aq. calcis) every two hours until 12 ounces milk every two hours taken (120 ounces.)
Dec. 5, 1897	88 oz. or 2640 c.c.	8	1011	Light greenish.		.039	
Dec. 6, 1897	82 oz. or 2460 c.c.	8	1010	Light greenish, no pigment		.038	
Dec. 7, 1897	83 oz. or 2490 c.c.	8	1010	Light greenish, no pigment		.034	
Dec. 8, 1897	86 oz. or 2580 c.c.	8	1010	Light greenish, no pigment		.032	
Dec. 9, 1897	80 oz. or 2400 c.c.	8	1009	Light greenish, no pigment		.032	
Dec. 10, 1897	82 oz. or 2460 c.c.	8	1010	Light greenish, no pigment		.031	Weight, 136 pounds end of second week on milk.
Dec. 11, 1897	84 oz. or 2520 c.c.	8	1011	Light greenish, no pigment	1.3	.03+	
Dec. 12, 1897	85 oz. or 2550 c.c.	8	1011	Light greenish, no pigment		.029	
Dec. 13, 1897	82 oz. or 2460 c.c.	8	1012	Light greenish, no pigment		.03+	
Dec. 14, 1897	80 oz. or 2400 c.c.	8	1012	Light greenish, no pigment	1.2	.028	Menstruation regular.
Dec. 15, 1897	70 oz. or 2100 c.c.	8	1014	Light greenish, no pigment		.019	
Dec. 16, 1897	70 oz. or 2100 c.c.	8	1013	Light straw	1.4	.016	Diet (eggs, soups) increased eighteenth day.
Dec. 17, 1897	65 oz. or 1950 c.c.	8	1014	Light straw		.018	
Dec. 18, 1897	68 oz. or 2040 c.c.	8	1016	Darker pigment	2	.023	Home diet, meat, etc., twenty-second day.
Dec. 19, 1897	69 oz. or 2070 c.c.	8	1020	Natural straw color	1.6	.03	
Dec. 20, 1897	69 oz. or 2070 c.c.	8	1020	Natural straw color	1.8	.034	No medicine except occasional dose of trional or bromid for insomnia spts. chloroformi for acidity of stomach twenty-sixth day.
Dec. 21, 1897	68 oz. or 2040 c.c.	8	1021	Natural straw color		.036	
Dec. 22, 1897	64 oz. or 1920 c.c.	8	1021+	Natural straw color		.04	
Dec. 23, 1897	60 oz. or 1800 c.c.	8	1023	High color, slight sediment, urates		.046	

No albumin, glucose nor indican found, except a trace of indican on December 20.

POINTS IN CONCLUSION IN URINE FINDINGS IN MILK-DIET CASE.

1. Great increase of amount of urine in one week after, upon skim milk alone (up to 120 ounces in twenty-four hours), the patient passing twice the normal amount of limpid urine.

2. Urea at the end of first week goes down to one-half normal, uric acid to .01 per cent.

3. Urea at the end of second week goes down to 1.3 per cent. and uric acid to .03 per cent. Up to this time amount of urine remaining twice normal.

4. Urea at the end of eighteenth day is 1.4 per cent., uric acid .016 per cent., one-fifth of normal. Diet now increased.

of short but decided recurrences without other known cause, and where melancholy rather than true melancholia seems the better term to use, as suggested by Dr. Mitchell in this case, since the man is not unbalanced by the "cloud suddenly descending unawares

[3] A Method for the Quantitative Estimation of Indican and Indirubin in the Urine. H. Richardson, M.D. and E. L. Whitney, M. D. (JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, April 16, 1898.)

*Indicanuria and Peptonuria: Transactions Philadelphia Medical Society, June, 1894.

[4] Clinical Lessons on Nervous Diseases, S. Weir Mitchell, M.D. Lea Bros. & Co., 1897, pp. 53 to 57.

[5] A Study of the Excretion of Urea and Uric Acid in Melancholia and in a Case Presenting Recurrent Periods of Confusion and Depression. American Journal of Insanity, April 18, 1898.

[6] Mental Depression and the Excretion of Uric Acid, Practitioner, Nov. 18, 1888.

upon him," and yet making the *compos mentis* suffering the more acute.

This man has greatly improved since last year by regularly abstaining from excess of proteids, by care as to bodily chilling and by outdoor life on his ranch in Iowa. "Dull care" we hope may finally be driven away by super-oxidation and restored nutrition.

We hope in future studies to elaborate the suggestive steps indicated in this work, but feel today confident of almost as wide a horizon in the sphere of etiology of disease through perverted metabolism as in the domain of bacteriology. Many of the remote reasons for such disturbed metabolic action may perhaps never be determined, yet the results are becoming more manifest and we are grossly derelict of duty if we fail to search and apply the therapeutic measure for relief and cure. The actual "why" is not always possible to find out. An intelligent woman recently, on learning of the theory of the neuron, immediately put the trite question: "Why should the neurons have motion?"

TABLE II.—EXAMINATIONS OF MR. C. E. (RECURRENT MELANCHOLY).

Urine of twenty-four hours; 7 P.M. to 7 P.M.

Date.	Condition.	Amount.	Amount taken, ounces.	Sp. gr.	Color.	Urea; grams in 1 c.c.	Uric acid.	Blood.
Jan. 13, 1897.	Depressed ten hours	45 oz. or 1350 c.c.	8	1020		.026542 = 2.6%	10¼ grs.	
Jan. 14, 1897.	Wt. patient, urine while much depressed	55 oz. or 1650 c.c.	8	1014		.024192 = 2.4%	10½ grs.; indican +	
Jan. 14, 1897.	Not depressed latter part of day	55 oz. or 1650 c.c.	8	1018		.025200 = 2.5%	100 mgm. in 200 c.c.; indican	
Jan. 15, 1897.	Well, unusually so during last 17 hrs.	37 oz. or 1110 c.c.	8	1022		.02688 = 2.6%	8½ grs.; indican	
Jan. 16, 1897.	Slept well; B. normal; pulse small, 74 to min.; T. 98.4° F.	45 oz. or 1350 c.c.	8	1020		.02474 = 2.4%	9¾ grs.; indican	
Jan. 17, 1897.	Reasonably well	42 oz. or 1260 c.c.	8	1018	All clear straw; acid.	.02688 = 2.6%	9 9 20 grs.; indican	7:30 P.M.; good spirits; r.b.c. {4,200,000; H = 90; w. b. c. {10,000.
Jan. 18, 1897.	Very bright	55 oz. or 1650 c.c.	8	1020		.02688 = 2.6%	10½ grs.; no indican	
Jan. 19, 1897.	Bright, then bad attack of throat irritation	48 oz. or 1440 c.c.	8	1018		.02642 = 2.6%	10¼ grs.; no indican	
Jan. 20, 1897.	Well; some depression last few hours	56 oz. or 1680 c.c.	8	1020		.02642 = 2.6%	16½ grs.; no indican	
Jan. 20, 1897.	During time very well part of day	33 oz. or 990 c.c.	8	1019		.02642 = 2.6%	7½ grs.; indic., trace	Phosphatic sediment on standing + in each specimen. Test for combined sulphates not made.
Jan. 20, 1897.	Very bad; see "card" acc't of attack		4	1022		.024192 = 2.4%	8 grs.; indic., mark'd	
Jan. 22, 1897.	Quite well since 20th	42 oz. or 1260 c.c.	8	1020		.02688 = 2.6%	7¾ grs.; indic., trace	
Jan. 23, 1897.	Twice somewhat depressed	36 oz. or 1080 c.c.	8	1022		.025200 = 2.5%	8.1 grs.; indic., trace	

* Patient's ever-changing mental state entailed frequent urinalyses on Jan. 20. No brickdust deposit, albumin or glucose in any of above.

ANALYSIS OF TABLE—QUANTITATIVE FINDINGS AS TO URIC ACID, UREA AND INDICAN IN THIRTEEN SPECIMENS.

1. Urine was saved for twenty-four hours.
2. Eight ounces of the amount used in tests.
3. Amounts passed in twenty four hours calculated as to proportion of uric acid and urea voided.
4. Specific gravity recorded.
5. Per cent. of urea given.
6. Grains of uric acid (11 normal for 1200 c.c.) voided in the entire amount of twenty-four hours' urine.
7. Indican tested as to color (with muriatic acid and sat. sol. chlorid of lime).
8. Albumin and glucose tested for in each case.
9. Patient was on ordinary "mixed" diet and in full activity. No medicine.
10. R. b. c., 4,200,000. No leucocytosis. H = 90 per cent.

CONCLUSIONS—URINE ANALYSIS, CASE OF RECURRENT MELANCHOLIA.

1. The specific gravity of the urine bore no relation to amount of urine voided.
2. The acidity of the urine was always marked.
3. Color of urine was higher when amount voided smaller.
4. There was no "brick dust" deposit of urates.
5. Average amount of urea voided in twenty-four hours equaled 2.5 per cent.
6. The normal (urea) being 2.7 to 3 per cent., this reduction can not be positively stated as abnormal, but the continuous subnormal amount with the fact that more than the average quantity of urine voided continuously would lead to the thought that suboxidation of proteids existed.
7. The lowest amounts of urea were recovered on the *two* occasions when the patient was much depressed mentally, viz., Jan. 14, 1897, 2.4 per cent. and Jan. 21, 1897, 2.4 per cent. In other examinations, recovered 2.5 and 2.6 per cent.
8. On corresponding dates, Jan. 14, 1897, uric acid equaled 10.5 grains, calculated for twenty four hours, ; Jan. 20, 1897, uric acid equaled 8 grains, calculated for twenty-four hours.
9. In the former (Jan. 14, 1897) 1650 c.c. voided in twenty-four hours, specific gravity 1014; in the latter (Jan. 20, 1897) only 990 c.c. voided in twenty four hours, specific gravity 1022.
10. Marked color reaction for indican was obtained in each of the two attacks of depression noted during the study. It was found in less amount in seven of the remaining eleven specimens recorded in the table.
11. The patient passed 55 ounces (1650 c.c.) on one day of his typic depression, the second day only passing 33 ounces (990 c.c.).
12. As both contained indican in large (color reaction) amounts, intestinal putrefaction may possibly be an important factor.
13. No albumin or glucose found in any specimen.
14. As to where the uric acid may be when not recovered in urine could possibly be told by difficult analysis of the blood at the time.

THE PULSE: ITS DIAGNOSTIC AND PROGNOSTIC VALUE.

Read before the Orleans Parish, La., Medical Society, Sept. 24, 1898.

BY T. S. DABNEY, M.D.

NEW ORLEANS, LA.

The proper study of mankind is man.—*Pope.*
Have you a working pulse?—*Shakespeare.*

Mr. President and Gentlemen: In the mad scramble for novelties which seems to have seized our profession, as it did the ancient Athenians, you may be surprised at my presumption in asking your attention to so prosaic a subject as "The Pulse: Its Diagnostic and Prognostic Value."

This is the age of the infinitesimally small, and he who would spring, like Minerva, full grown into fame, must, like Pasteur, Koch, Sanarelli, Klebs, Loeffler, Eberth and Laveran, succeed in standing sponsor for some micro-organism. Failing that, you might yet seek the "bubble reputation" by investigations into the biology of certain of these lower forms of life, and like MacCallum and Opie of Johns Hopkins, succeed in catching the Halteridium of Labbe in his amorous advances. These observers having shown that the passive granular form of this hematazoon is the female, and the lusty, aggressive hyaline form the male, is but to open the way for a more thorough study of their family relations.

Pardon me for this digression, but I felt some apology due you for occupying your time with the pulse of man himself instead of that of some schizomyces. Without underestimating the labors of those toilers in the hitherto untrodden fields of bacteriology, you will yet excuse me for not believing that man is of the bacillus, by the bacillus and for the bacillus.

The physicians in the olden times gave much careful attention to the pulse, and the amount of information to be gained in its study is astounding. By the introduction of percussion by Anenbrugger in 1761, and auscultation by Lænnec in 1816, the interest in the study of the pulse, was decidedly lessened. This interest was further diminished by the introduction in 1861 by Marey, of the sphygmograph. The clinical thermometer, introduced somewhat later, dealt a death-blow to the painstaking study of the pulse. Every new study tends to force the old to the background. We must ever bear in mind that not all that is old is bad, nor all that is new good. Let us rather follow the noble advice given by St. Paul to the Thessalonians: "Prove all things; hold fast that which is good." Tried in the crucible of time the gold can be separated from the dross. I hold with Cicero that: "Not to know what happened before we were born is to remain always a child." I welcome every new discovery that renders diagnosis or prognosis more certain, and while fully appreciating the impetus given physical diagnosis by the introduction of means and methods of precision, yet I firmly believe in holding fast to all that is good and in profiting by the experience of those that preceded us.

The value of the study of the pulse can not be overestimated. The sphygmograph but records what the finger feels, and the more the finger is educated the more it feels. The tracing of the sphygmograph is, as it were, a photograph of the pulse, and like all photographs, lacks tone, expression and volume—the original must have been known to be appreciated. Without seriously considering the claims of the Arabs, Moors and Chinese—and their claims are many—we may state that Galen of Pergamos, Mysia, is the earliest authentic writer on the pulse, and he seems to have read it like an open book. I do not believe there is a more masterly and comprehensive treatise on this subject than that by him who won the double sobriquet of "Paradoxologus" (wonder-speaker), and "Paradoxopœus" (wonder-worker"), in imperial Rome, where he became the physician to the emperors, Lucius Verus and Marcus Aurelius. To Galen, the pulse seemed to speak, and his prognosis, based upon it, often smacks of the marvelous. Though living in the second century, he was unquestionably a great physician, and to his close study of the pulse, much, if not most, of his reputation was due; for it is an indisputable fact that nothing adds more to a physician's fame than an accurate prognosis. Nothing strikes the human intellect with more awe than one's ability to read aright the portents of the taps of those "muffled drums (that) are beating funeral marches to the grave."

Strange as it may appear, Hippocrates seems to have paid as little attention to to the value of the pulse as the majority of the teachers of physical diagnosis in our schools today. About all to be learned of the pulse in the average medical school, now-a-days, is to count it.

Galen named and accurately described thirty-six different varieties of the pulse. Just think of it! I can not do better than to reproduce his original table:

1. Long pulse; the artery strikes several or all of the fingers.
2. Short pulse; artery strikes only one or two fingers.
3. Wide pulse; artery distended.
4. Narrow pulse; artery contracted.
5. Elevated pulse; artery strikes forcibly and repels hand.
6. Low pulse; artery scarcely perceptible.
7. Big pulse; artery distended in width, length and elevation.
8. Small pulse; artery little distended according to these three diameters.
9. Quick.
10. Slow.
11. Frequent.
12. Rare.
13. Vehement or strong; artery strikes fingers forcibly.
14. Feeble or languishing; reverse of above.
15. Hard; the finger yields to the pulsation.
16. Soft; the pulsation yields to the compressing finger.
17. Full; the artery is full and resists the touch.
18. Empty; the artery disappears, yielding to the finger, possessing no solidity.
19. Equal.
20. Unequal.
21. Rat-tail; starts large and rapidly diminishes down to a point like a rat's tail.
22. The feeble rat-tail; one seeming to cease, or ceasing altogether.
23. The rat-tail that strikes more forcibly the two middle fingers, scarcely touching the first and last.
24. Intermittent.
25. Intercident.
26. Failing; stopping altogether.
27. Capricious; interrupted in the middle of its diastole, then finishing in quicker time that of its commencement.
28. Dicrotic; striking twice like a hammer rebounding from an anvil.
29. Wavy; rising gradually under the fingers.
30. Vermicular; like a worm.
31. Formicating; like an ant.
32. Trembling.
33. Palpitating.
34. Convulsive; artery tense like a cord.
35. Serrated; strikes fingers unequally, like a saw.
36. Ardent; artery rising and striking promptly and forcibly.

To take the pulse properly, the physician should be seated by the side of the patient, who should be in a sitting or recumbent posture, with arm extended and resting on some support. The physician should lightly place the four fingers of his right hand over the left radial artery of the patient, with his index finger nearest patient's hand; the little finger will thus be the first to receive the stroke. The pulse should always be taken at each wrist, for reasons to be given later. By so doing the presence of aneurysms can often be suspected, and frequently verified. Pressure should alternately be made and relaxed to determine the hardness or softness, force or feebleness, the largeness or smallness, the swiftness or slowness of the pulse. Again, other factors, such as the frequency, the rareness, the irregularity, the inequality, must be taken into account. A strong pulse is characterized by volume and vigor; a weak one by the reverse conditions. To the tyro, the number of pulsations to the minute, which can generally be counted accurately by means of a watch, is all-important; but valuable as this information often is, it is the least important of all other signs to the experienced clinician, who cares little whether the heart contracts seventy-five or a hundred times a minute. He is mainly interested in the dynamics of the viscus, rather than in the derangement of its running-gear. A few drops of digitalis, the fractional part of a grain of glonoin, a glass of beer, fright and the various neuroses, readily serve to affect the inhibitory or accelerator fibers of that "rope of mingled strands"—the vagus and the sympathetic system. Above all things, should the family physician be familiar with the pulses of his patients in health, for, as is well known, some families have abnormally slow and others fast pulses. According to Fothergill (The Physiologic Factor in Diagnosis), "a pulse of 40 or even less is not rare" (normally). All of us are familiar with patients whose pulses in health run from 90 to 100 and even higher. Then again, arhythmia, cousin-

germain to the dilated ventricle, is normal in a number of persons whose hearts beat with regularity only under the stimulating effects of pyrexia. Again, we find intermittency—that sign so closely linked with muscular and structural decay, always alarming and frequently speaking in unmistakable tones of impending disaster—is often but a neurotic trick, or else it may be caused by any sudden shock, by excitement, by advancing years, or in the convalescence from severe illness. We should ever bear in mind that the pulse depends upon three things: the ventricular systole, the arterial walls and the state of the arterioles.

The antithesis in the state of the arterioles is beautifully shown in the pyrexias, and in the granular kidney. In the former the blood flows freely through relaxed arterioles, giving us the rapid pulse of half-distended and slack vessels. The accelerator fibers of the vagus or sympathetic being stimulated, the heart pumps vigorously to supply blood for the unfilled vessels. In the latter, the roots of the vagus being flooded the inhibitory strands of the vagus are excited and the heart's action slowed, and we have the ominous, cord-like pulse of high arterial tension. As a fast pulse does not necessarily imply mural decay nor pyrexia, so a slow one is not of necessity of grave import. That the slow pulse of yellow fever is not due to any specific bacillus nor its ptomains, but rather to the toxic effect of an accumulation of the bile salts in the blood is clearly shown by the presence of the same symptom in ordinary cases of icterus. This fact is further accentuated by the coincidence of the appearance of colemia and the bradycardia and by their disappearance *pari passu*. It may, *en passant*, be stated (Louis' law) that the earlier the appearance of jaundice (pronounced) the graver the prognosis; commencing by or before the third day, death is almost certain; by the fifth day, death more probable than recovery; after seventh day, recovery almost assured. It will thus be seen that bile, like muscarin, first markedly slows the heart's action by powerfully irritating the inhibitory fibers of the vagus. If this irritation be carried too far the heart's action is slowed down until it ceases altogether. In such an event the patient will be found to be of a bronzed or mahogany tint, so marked is the cholemia. Accepting this as a fact the logical treatment readily suggests itself and the rationale of the large, high saline enemata is understood. However, the ordinary slow pulse of typhus icteroides, as you all know full well, is not of grave moment. The danger lies in the rising and not in the falling pulse ordinarily. To put it more scientifically, we have more to apprehend in this disease from the stimulating effect of some specific toxin upon the accelerator fibers of the sympathetic system than from the effect of bile upon the inhibitory centers of cerebro-spinal origin. It is hardly necessary, in this connection, to call your attention to the lack of correlation of pulse and temperature so pronounced in yellow fever; but it may not be amiss as a diagnostic point, to state that a falling pulse, taken in connection with a rising temperature in an acute febrile disease, is well nigh pathognomonic of yellow fever. The elder Faget called particular attention to this anomaly.

It is in pulmonary disease that the prognostic value of the pulse is invaluable. Be it phthisis or pneumonia, a rapid and steadily-increasing pulse-rate is ominous. In the early diagnosis of phthisis, I regard it as far more valuable than the clinical thermometer, though the value of that instrument can hardly be overestimated. Often the rapid pulse will enable one to diagnosticate phthisis before the thermometer gives any evidence of pyrexia, and long before any physical signs are appreciable. A pulse running from 90 to 100 habitually, in a person of bad family history, demands your urgent attention, and you should not lose valuable time waiting for "cultures" to confirm your suspicions, but act promptly in giving your patient the benefit of the best dietetic, therapeutic and climatic treatment—treat the disease first, diagnose it afterward, and thereby avoid following the advice, seriously given to his class, of a distinguished pathologist of my acquaintance: "follow *all* their patients to the dead-house."

The fast pulse of nervousness can readily be differentiated. You should also bear in mind that tachycardia in old alcoholics, is the rule, and hence of no prognostic value. Moderate but habitual drinkers generally have an accelerated pulse-rate. All you gentlemen who have had occasion to make many examinations for life assurance—I think "assurance" the correct term—must have been struck with this peculiarity of the pulse of the ordinary man-around-town who habitually takes a stimulant with his lunch, and usually a cocktail before dinner, and a postcœnal *pousse-café*.

The bradycardia of fatty degeneration of the heart is apparent rather than real, as many of the ventricular contractions are too feeble to propel the blood with sufficient force to be appreciated at the radial. The stethoscope will clear up the discrepancy. The slow pulse of the gouty heart, or rather the hypertrophied heart of chronic Bright's disease, is readily differentiated, as it is tense and cord-like and usually accompanied by large quantities of limpid urine of low specific gravity. However, in time, when fatty degeneration sets in, and the walls of the heart become weakened, the ventricles lose their force, and the urine becomes scanty and high-colored. When this stage is reached, the patient is on the down-grade, or as Fothergill tersely puts it: "An increasing bulk of urine tells that the case is at the stage of waxing hypertrophy; the fall in bulk tells that the hypertrophy is being undermined by a histolytic process." From a prognostic point of view, this symptom can not be too strongly insisted upon, for as Traube truly says, a high blood-pressure means a large bulk of urine, and conversely. The polyuria of hysteria, with its tight pulse, is but another proof of Traube's aphorism. The large quantity of limpid urine passed by the hysteric, robs the high arterial tension found in this class, of its significance. The pulse of failing hypertrophy is so characteristic and is fraught with such a hopeless prognosis that you will pardon my stating that whenever the pulse of a suffer from chronic nephritis beats regularly for several strokes, quickly followed by several imperfect strokes, a slight halt, and then a full contraction, you may safely say that the curtain on the last act of the drama of life is about to be rung down.

The simple halt of the neurotic or the dyspeptic can never be mistaken for this grave sign, as it is never preceded by the imperfect strokes. However, in some dyspeptics the halt is so well marked as to be plainly and painfully remarked by the patients themselves. Much needless suffering has been caused this unfortunate class of patients by the hasty diagnosis of heart disease. I recall the case of a wealthy lady of this city, a great sufferer from atonic dyspepsia and this

form of abrupt halt, who, for years, was in constant dread of sudden death. In spite of my frequent assurances that her stomach and not her heart was the viscus affected, she could not quite believe that her former medical advisers were all wrong, and I alone right, for, "can I not feel my heart stop?" she would often say. During one of her trips north, I prevailed on her to consult that chief among diagnosticians, DaCosta. Since that time, ten years ago, she has learned that flatulence by pressure on the tendinous portion of the diaphragm can cause tumultuous action of the heart as well as complete intermittency.

Dr. Dehio of Dorpat claims that most cases of bradycardia are due to nutritional changes in the automatic nerve centers in the heart, dependent probably on local sclerosis of the branches of the coronary arteries leading to such centers. As shown by Dr. J. W. Ogle (London *Lancet*, February, 1898) in four cases reported by him to the London Pathological Society, the bradycardia was associated with thickening of the endocardium and fibrinous deposits mostly at the bases of the ventricles. The bradycardia of true angina pectoris is nearly always associated with sclerosis, calcification or ossification of the coronary arteries themselves, or else a similar condition at or near the aortic opening. This condition renders the prognosis very grave, and calls for promptness in lowering arterial tension, in toning up the cardiac musculature, and in anticipating cerebral ischemia. The prompt administration of such remedies as nitrite amyl, trinitrin and strychnia, with the continued use of the iodids, fulfil such requirements. All vasoconstrictors, such as ergot, digitalis and quinin, should be studiously avoided. Morphia should be given, *if at all*, with the greatest caution.

In this connection it might be well to call attention to the cardiac ganglia imbedded in the auricles. These ganglia are intimately connected with the sympathetic nervous system. They are purely sensory, and have no motor fibers. Romberg and His have demonstrated in the heart muscular transition fibers that pass directly from the auricles to the ventricles, and the rhythmic action of the heart is now believed to be entirely dependent upon the contraction of these muscular fibers, and is not due, as was generally held, to the cerebrospinal or sympathetic systems. The action of the heart is therefore automatic. Uremia is responsible for a considerable number of cases of bradycardia. These cases are markedly benefited by rest, a milk diet, warm baths and abundance of pure water. The great majority of cases of bradycardia are due to diseases of the cord and brain. In these cases the prognosis is hopeless. The prognosis in other cases depends upon the cause—toxemias, neuroses, reflex, and convalescence from various diseases, etc.

The cause, taken in connection with the dynamics of the heart, should enable you to prognosticate accurately. Given a slow pulse, accompanied, upon slight exertion, by vertigo from cerebral anemia, cyanosis and dyspnea, your prognosis must of necessity be grave; but, on the other hand, as long as the slow, strong beats of the heart supply all wants of brain and body, the prognosis is favorable. However, it can be stated broadly, that arhythmia is usually of grave import. Occurring in children in connection with fever, it is strongly suggestive of tuberculous meningitis.

The unequal pulse always demands a guarded prognosis, as it usually denotes an aneurysm involving the root of the subclavian artery, although it may be due to obliteration of the radial by injury or by some growth making pressure on the vessel. At other times it it purely neurotic.

It is beyond the scope of this paper to enter into details in reference to the many varieties of pulse and their significance. I have endeavored but to point the way and to remind all general practitioners of medicine that "the proper study of mankind is man," and the more thorough our study of man, the more competent and successful practitioners we will become. I would not dissuade any of the younger members of the profession from the alluring fields of bacteriology, for medicine is under lasting obligations to the careful students of the lower forms of life, but let us never forget that it is by the art and not by the science of medicine that we gain our reputation, and, incidentally, our livelihood. All can not be celebrated botanists, chemists, neurologists, bacteriologists and pathologists. Let us take unto ourselves the homely proverb, *ne sutor crepidam judicaret*. By availing ourselves of the labors of these men in special fields we will profit greatly; but our success as practising physicians, now, as formerly, will depend upon our close observation of all that concerns *homo bimanus*.

Charles Darwin was astounded at the instantaneous and immense reputation his "Origin of Species" brought him. He tells us in his modest way that he had done nothing but *observe* closely; aye, there is the secret, he had *observed*, closely, accurately, scientifically, the minutest detail. As in natural history, so in medicine. How many of us have eyes, yet see not; ears, yet hear not? Shakespeare spoke truly when he said: "Most poor things point to rich ends." There are men in our calling who have studied so carefully the stomach of the mosquito that they are able to tell you all the reasons why the malarial hematozoon prefers that particular viscus of that particular dipter to that of its gregarines or coccidia. This is all very interesting and scientific, but we do not treat gastric catarrh of the mosquito. By close observation of the laws of health and disease, we all may become qualified to practice the art of medicine successfully. It is a well-known fact that the the treatment of many diseases, notably pneumonia, tuberculosis, malaria and pertussis, has not been crowned with better results since the microscope has introduced to us the Lilliputian armies that cause their pathology; nor have the most successful practitioners been those best versed in the pure realms of science. The close observers have always, in every age, been the most successful physicians. With Oliver Wendell Holmes I say:

> How blest is he who knows no meaner strife,
> Than art's long struggle with the foes of life.

A CASE OF ADIPOSIS DOLOROSA.

Presented to the Section on Neurology and Medical Jurisprudence, at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver, Colo., June 7-10, 1898.

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In a paper read before the Philadelphia Neurological Society in 1891, Henry[1] reported the case of a married woman, 63 years old, in whom, at the age of

[1] Journal of Nervous and Mental Disease, March, 1891, p. 154.

49, somewhat circumscribed, painful, fatty swellings appeared successively in various parts of the body. The patient was an immoderate drinker and had had epileptiform convulsions frequently in infancy. Menstruation had begun at 11 and had ceased abruptly at 35. Sensibility was impaired in proportion to the deposition of fat. The case was described as one of *myxedematoid dystrophy*, and for the condition the designation *paratrophy* was proposed. In a paper read before the American Neurological Association in 1888, Dercum[2] reported the case of a widow, 51 years old, in whom the arms began to enlarge at the age of 48 or 49 and were the seat of pain. Back, shoulders, arms and sides of the chest became the seat of huge pendulous masses, firm yet elastic, in places finely lobulated and feeling like bundles of worms. Menstruation had begun at 15 and had ceased abruptly at 35. Microscopic examination of a bit of tissue removed from one of the swellings disclosed the presence of only fat and connective tissue. The case was described as one of *subcutaneous connective-tissue dystrophy* associated with symptoms resembling myxedema. In a subsequent communication Dercum[3] reports in greater detail both of the foregoing cases, together with a third, describing them as "three cases of a hitherto unclassified affection resembling in its grosser aspects obesity, but associated with special nervous symptoms," and proposing for them the name of *adiposis dolorosa*. The third of these cases occurred in a widow, 60 years old, who had for many years had soft, fat-like masses or swellings in various parts of the body that were painful to touch. Cutaneous sensibility was diminished and the patient was demented. Death resulted from gradual failure of vital force and the thyroid gland was found to be enlarged, indurated and calcified. Death occurred also in the first of these cases and the thyroid was found likewise indurated and calcareous, although small.

In the article on adiposis dolorosa in "A Text-book on Nervous Diseases by American Authors,"[4] Collins refers to six cases under the observation of Peterson and Loveland and to one under his own observation. He states that all of the cases but one occurred in women from 40 to 60 years of age; that in but one could a specific or alcoholic history be ruled out, and that in all a neuropathic predisposition was evident.

In a consideration of the treatment of myxedema, cretinism, exophthalmic goiter, obesity, etc., with thyroid extract, Ewald[5] refers to the case of a man, 47 years old, weighing 217 lbs., who presented a puffy appearance, with thick masses of fat about the nipples and the umbilicus and upon the neck, and pains resembling those of neuritis. Perspiration was scanty and the condition was suggestive of myxedema, though wanting in the characteristic features of this disorder.

Spiller[6] has reported three cases of adiposis dolorosa, all in women, two unmarried and aged 25 and 65 respectively, and the other married and 45 years old. In the first there were both diffuse enlargement and distinct painful swellings, with paroxysmal exacerbations. Menstruation was normal. In the second case the patient began to grow stout at 40, when menstruation ceased. For thirteen years there had been pain in the lower extremities, and for two years in the fatty tissue of the limbs and trunk, with paroxysmal exacerbations. The obesity had increased markedly since the advent of the latter pain. There were tenderness and pain on palpation, manipulation and pressure, and no anesthesia. The fatty accumulation was marked on the thighs, the calves, the abdomen, the nates and the back, and also in the arms, though less in the forearms and absent from the feet and the hands. There was no special deposit of fat and no pain in the face or neck. The isthmus of the thyroid was exceedingly small. The third patient had been corpulent for twelve or thirteen years, following the birth of her last child. Pain had been present for years, recurring in paroxysms. Swellings appeared beneath the skin of the lower extremities, at first small, then larger and finally diminishing in size. Sensibility was preserved and the face was not involved. Improvement followed massage and the administration of thyroid extract. A cross-section of muscle from one of these cases showed no appreciable deviation from the normal, except perhaps a slight enlargement of the nuclei.

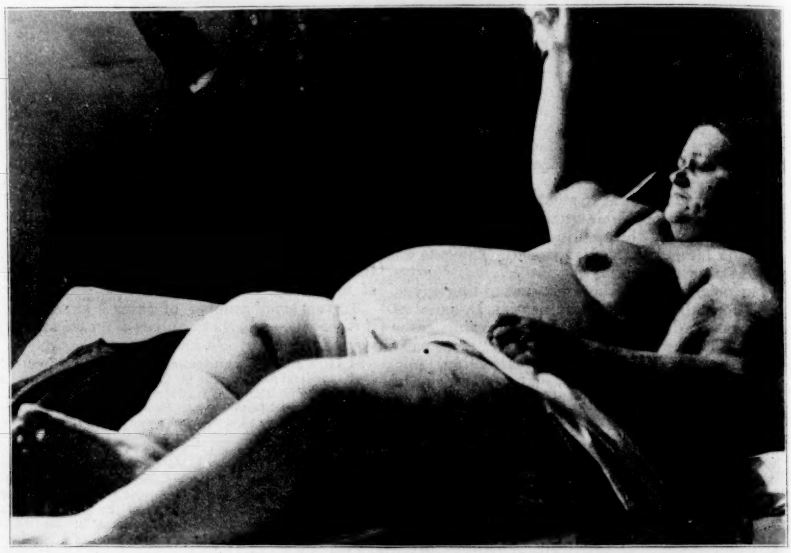
To this small number of cases I am able to add a further one, and also the notes of a case kindly placed at my disposal by Dr. Dercum:

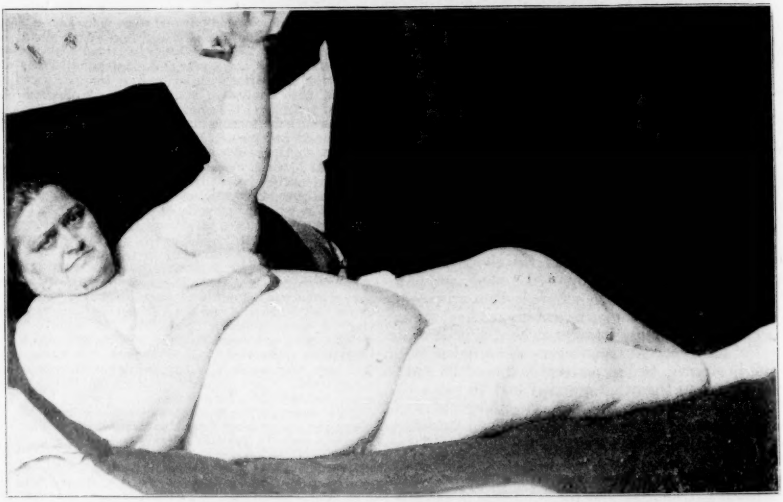
M. G., a married white woman, 48 years old, was admitted to the medical department of the Philadelphia Hospital June 6, 1896, and shortly afterward the following facts were elicited: Her mother had been dropsical and had died at the age of 86. Her father and one brother had been killed in war. Two other and older brothers were alive and well. A sister also was living at the age of 60 years. Another sister had died in a dropsical state. The sister and one brother were said to be stout, but within ordinary limits. A maternal great-grandmother also had been unduly stout. The patient related that she had suffered from attacks of erysipelas of the lower extremities on four different occasions, the first at about the age of 30, the second six years later, the third at some forgotten time after, and the fourth a year before coming under observation. She had borne five children, all delivered instrumentally. Of these one had died during birth and another of diphtheria; of the remainder one boy and one girl were spare and a daughter of 28 was stout. Her husband had died of pneumonia eighteen years previously. Menstruation had begun at the age of 13 years and had been regular and painless until the age of 41, recurring thereafter with increasing frequency and being attended with excessive hemorrhage. At the age of 35 the patient is said to have broken down from overwork and worry. At this time twitchings were observed, and a sense of such movements had persisted thereafter. After an interval of uncertain length the woman noticed enlargement of the abdomen. Then the lower extremities became involved, the increase in size extending gradually and progressively over the entire body, with the exception of the face and the hands and the feet. The patient had suffered a good deal from pains in the back, especially in the sacral and interscapular regions. The pain was intermittent and had set in with the accumulation of fat. For more than two years there had been a more or less constant sensation of beating in the head, and for a year or more ringing in the ears. There was no vertigo, and auditory perception was good. The appetite was preserved; it had never been excessive, and the patient had no preference for, nor had she indulged in, special kinds of food. There was at times nausea and occasionally vomiting, the ejected matters sometimes containing blood. For more than a year the patient had been helpless, being compelled to lie abed and unable to move about. She occupied two single beds in the hospital and was scarcely able to help herself in any way.

On examination at the time of admission to the hospital heart and lungs were found to present no abnormity. The face was scarcely larger or fuller than that of a person of ordinary size. The circumference of the neck was 17 inches, of the bust 60 inches, of the waist 53 inches, of the abdomen 70 inches, of the arm above the elbow 21.5 inches. The temperature, taken for months at a time, adhered to the normal level; the respirations fluctuated between 18 and 32, averaging perhaps 24; the pulse ranged between 68 and 108, averaging about 84. The urine, examined repeatedly, displayed a specific gravity between 1019 and 1028 and, other than the presence of a mall number of leucocytes, exhibited no deviation from the

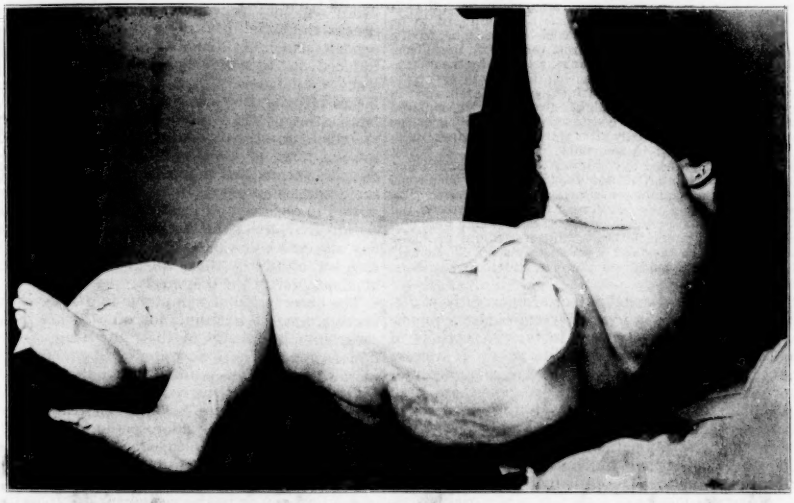
[2] University Medical Magazine, December, 1888, p. 140.
[3] American Journal of the Medical Sciences, 1892, p. 521.
[4] Edited by Dercum, Philadelphia, 1895, p. 898.
[5] Berliner klinische Wochenschrift, Jan. 21, 1898, p. 268.
[6] Medical News, Feb. 26, 1898, p. 268.

normal. On examination on June 18, 1897, the hands were observed to be well nourished, but of ordinary size. The circumference of the forearms above the wrist was 7.25 inches, below the styloid processes 6.6 inches. At the elbow there were marked creases on the dorsal and palmar aspects. The circumference 1 inch below the flexure was on the right 13.75 inches, on the left 12.5 inches. There was only a small growth of hair in the axillæ. The mid-humeral circumference on the right was 16.5 inches, on the left 16 inches. The upper extremity was strikingly conoidal in form, with the base at the shoulder. The fat of the neck was not markedly increased. The breasts were large and extensive, though flat, falling in huge apron-like folds. The right appeared to be larger than the left and its pigmentation was the more pronounced. The mammillary areolæ were marked, and also the tubercles. The circumference of the trunk at the waist was 41 inches, at the level of the sacrum 59 inches. The distance from the olecranon process of the ulna to the styloid process was 10 inches, from the acromion to the olecranon 13.75 inches. The circumference at the middle of the thigh was 31 inches. The distance from the outer





margin of the patella to the external malleolus was 16 inches and to the outer extremity of the inguinal fold 17 inches. The circumference at the middle of the leg was 17.5 inches. The right foot was 9.75 inches long, the left 10.25 inches. The surface of the skin was mottled, purplish and cyanotic on the right side of the body, on which the patient lay. The heart sounds were quite clear and distinct. The tongue was broad, fissured and tremulous; the patient stated that it had always presented a similar appearance. The ears were not enlarged. The thyroid gland could not be felt. The hair was soft and unctuous. The skin also was soft, and perspiration was free. The masses of fat yielded a cord-like sensation to touch, and manipulation elicited tenderness. The patient had received varied treatment, without appreciable effect. For a time desiccated extract of thyroid gland was prescribed, 5 grains twice daily, but in a short time the patient declined to take the medicament, complaining, among other things, that she had been poisoned by some of the drugs she had received. Subequently she developed pronounced delusions and it became necessary to remove her to the department for the insane.



While it may be objected that this case is lacking in some of the symptoms of adiposis dolorosa, as laid down by Dercum, it will be conceded that it is unlike an ordinary case of obesity. The principal accumulations or deposits are nearest the trunk and they hang in conspicuous folds, while the degree of incapacitation for the simplest activity is extreme. Pain has not been a prominent symptom and we have no knowledge of paroxysmal variations in the degree of enlargement, but the patient's memory was not reliable and her statements were at times wanting in positiveness. The case is in some respects not unlike one reported by Laidlaw[7] as an example of *elephantiasis*, occurring in a woman, 45 years old, who in the performance of some laborious task at the age of 27, suffered an injury of the abdomen near the umbilicus. The cutaneous and the subcutaneous tissues of the affected parts became reddened, swollen and infiltrated. The acute symptoms soon subsided, leaving well-marked hypertrophy, which gradually diminished. Two years later the left leg became covered with scales and enlarged, and the abdominal condition grew gradually worse. Seven years after this the woman fell from a ladder and wounded the right leg above the ankle with a rusty nail. Symptoms of lymphangitis developed, from which recovery ensued. Three months later the left leg was wounded as the result of a fall and it became inflamed and increased in size. The enlargement extended upward, and in a short time the right leg also began to increase in size. The hyperplastic parts became the seat of cracks and fissures and indolent recurring ulcers. The illustrations accompanying the report show great enlargement of the legs, thighs and abdomen, with immense buttocks, full shoulders, while the face, feet and hands were relatively small.

As an instance of a further anomalous form of *obesity* may be mention a case reported by Adler,[8] occurring in a mulatto, 53 years old, with a syphilitic history, but with none of obesity in the family, who presented an enormous growth in the middle line at the back of the neck, two smaller bilateral masses symmetrically situated in the occipital region, another in the middle line below the chin forming an immense dewlap and extending up into the parotid regions, one in each groin absolutely symmetrical and projecting forward as well-rounded swellings. A more diffuse fatty deposit was present on the arms and forearms. There was one unilateral tumor over the left rectus muscle above the level of the umbilicus. The several growths were movable and free from pain, while the overlying skin was tense and unadherent.

I am indebted to Dr. Dercum for the following notes:

A married woman, 36 years old, in excellent health and free from physical abnormity, while standing in the aisle of a trolley car, was thrown to the floor as the result of a collision with a heavy wagon and at once became unconscious. She was sent home in a carriage and was subsequently unable to move without assistance. Later she was able to sit up in a rolling-chair and got about with the aid of crutches. A miscarriage took place fourteen days after the accident. The patient suffered greatly from pain. When examined, a year after the accident, she could not stand without assistance, although she could

[7] Jour. of Am. Med. Ass'n, vol. xxvii, p. 145.

[8] Pacific Medical Journal, September, 1893, p. 529.

walk with the aid of crutches. Superficial pressure over the spine in the lower dorsal, lower lumbar and sacral regions and also over the coccyx induced pain, and deep pressure over the muscles of the back of the trunk in the lower dorsal and lumbar regions on the left side, and in less degree on the right side, elicited tenderness. Similar tenderness was noted also on the left side of the chest. Transmitted shock caused pain referred to the lumbar region, flexion of the trunk pain referred to the same region, and especially lateral flexion to the left. Attempts to extend the legs, with the patient seated on a chair, induced pain referred to the back of the legs and thighs. The knee-jerks were exaggerated. There was some analgesia of the left arm, left leg and left side of the trunk, but no inflammatory or ovarian tenderness, and no limitation of the visual fields. Upon the left forearm there were found seven or eight small swellings, varying in size from a small marble to a walnut, soft to the touch and apparently made up of fatty tissue. These were exceedingly painful and tender on pressure. The patient was positive that they had made their appearance some six weeks after her accident, when she became aware of the presence of several slightly swollen and tender places upon the left forearm. These had increased in size and continued to be painful. The patient suffered from occipital headache, from a sense of constriction of the head, from vertigo, at times from ringing in the ears and from backache, relieved by the recumbent posture. She slept badly, having difficulty in getting to sleep and being disturbed by frightful dreams. She felt worse in the morning on arising than at night on retiring. She suffered from indigestion and chronic constipation. Palpitation of the heart was frequent, especially after unpleasant dreams. Micturition was increased in frequency, particularly at night. Perspiration was induced by slight exertion. On examination, some nine months later, it was found there had been some subsidence of the symptoms indicative of spinal strain. The painful masses upon the left forearm were still present and had undergone no appreciable change in size. There were now noticed, in addition, several large, diffuse swellings upon the lower portion of the back and in the sacral region. These were soft and painful and tender on pressure, and like the others, although larger.

As defined by Dercum,[9] adiposis dolorosa is a disorder characterized by irregular, sometimes symmetrical, deposits of fatty masses in various portions of the body, preceded or attended with pain. It appears about middle life or later and the larger number of cases have occurred in females. In some there been an alcoholic history, in others a syphilitic history; in still others rheumatism may have been an etiologic factor; further, traumatism may be a provocative agency. Nothing more definite, however, can be said of the etiology. The principal manifestation is the presence of masses of fatty tissue of variable size, sometimes exceedingly large, variously distributed upon the trunk and the extremities, and the seat of pain sometimes spontaneous, sometimes induced by pressure or manipulation. The affection may set in with pain of neuritic character and the swellings may undergo increase of size in paroxysms attended with exacerbations of pain. The new fatty tissue has a boggy, soft, at times pultaceous and wormlike, feel. Face, hands and feet are not involved. In some cases sensibility is impaired. The skin exhibits no gross changes. Hemorrhages from mucous surfaces have been observed in some cases. The disease is essentially chronic, with a tendency to be progressive in course. The morbid anatomy consists, so far as is known, in an increase of fatty and connective tissue, with degenerative changes in nerves. The thyroid gland has been found indurated and calcareous. The disorder differs from other forms of obesity in the presence of pains and sometimes of impaired sensibility; and from myxedema in the freedom of face, hands and feet and in the absence of the pronounced mental and trophic manifestations of that disease. In treatment good results may be expected from administration of thyroid extract and from massage.

[9] Twentieth Century Practice, vol. xi, p. 554.

SOME CONSIDERATIONS OF THE SYMPTOMATOLOGY IN THE DIAGNOSIS OF TABES.

Presented to the Section on Neurology and Medical Jurisprudence, at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver, Colo., June 7-10, 1898.

BY J. M. AIKIN, M.D.

Neurologist to the Methodist Hospital, and Clinical Lecturer on Diseases of the Brain and Nervous System, in the Creighton Medical College.

OMAHA, NEB.

About two years since, a physician doing a large practice in general medicine, impressed me wonderfully with the statement that seven cases of locomotor ataxia had come under his observation and treatment during the preceding three months. Of these, five had completely recovered, one died after three weeks' illness, from inability to swallow food, and one was convalescent. My disbelief in the curability of tabes induced me to seriously consider the *alleged* prevalence of the malady as truly alarming, whereupon I began investigating vital statistics from several of the large cities of the United States, and found that in the whole number of deaths reported as due directly to some form of nervous disease, only about 1.2 per cent. was accredited to locomotor ataxia. Reviewing some cases neurologic in character, that I was permitted to observe and treat during the five years preceding 1897, the shortest period for observation in any one case being one year, I was unable, in seventeen out of twenty-three alleged cases of locomotor ataxia, to verify the diagnosis.

The observation of symptoms in disease is quite as necessary as the accumulation of evidence in a legal case, and a knowledge of their meaning is certainly no less imperative in forming right conclusions, than is the action of a judicial mind in estimating the value of testimony in a case at law. Moreover, clinical evidence in disease is quite as truthful as testimony at the bar, while microscopic findings certainly can not be more liable to error than twelve jurors, each exposed to ulterior influences.

During the past few years, the surprising advance of medical minds in the pathogenesis of nerve tissue per se is without a parallel in any branch of medicine, or period in its history. I therefore proceed—with a confidence maintained not alone by self-gleaned facts, but supported by truths, the authenticity for which many medical men in this ASSOCIATION deserve honorable mention—to assume that neurologic medicine has established a basis from which a proper estimate of the evidence, in at least the more common diseases of the nervous system, may render serious mistakes in diagnosis unpardonable.

The activity shown by American physicians recently, in placing before the public so many excellent text-books and essays, treating especially of the features of nervous diseases, gives assurance irrefutable that those already in active practice have easy access to the latest information on this class of diseases.

The American propensity to observe, and inquire into the meaning of the thing seen, has placed him as a leader of the world in his observation and knowledge of the phenomena of the nervous system. Clinical evidences in individual instances of nervous diseases presenting varying symptoms, are accumulating and must accumulate until, by comparison and elimination, we arrive at the characteristics of a type, as has years since been done by internal medicine in

some of the exanthematous diseases—e.g., measles and scarlet fever—which shall be accepted and accorded a place in medical nomenclature.

Early observers discovered and recorded symptoms indicative of some grave disorder of the nervous system, but not until about half a century since was any exact account given locating the pathology productive of these symptoms in the spinal cord, thereby elevating the group to the dignity of nosologic consideration, and ten years later the name "locomotor ataxia" was coined. This term was an unfortunate one, in that it fails to convey anatomic location, or character of the neural changes, but further, in that it does afford the incompetent or careless observer a convenient peg on which to hang every case of nervous phenomena presenting sensory disturbances with pain, or difficulty of locomotion unless by constantly watching the placing of the feet. If perchance, too, the knee-jerk is absent, the testimony closes and the label "locomotor ataxia" is attached.

No member of this ASSOCIATION would venture a diagnosis on the foregoing clinical history, but I doubt not many physicians present have seen and treated patients whose lives had been rendered more miserable by long-continued treatment for locomotor ataxia, when in reality they were suffering from some other, and possibly curable, malady of the nervous system. The chronicity, too, of tabes, carrying the patient through periods of time measured only by months and years to the full development of its clinical picture, may so separate the sign-boards along the route, as to allow the most experienced clinician an opportunity for error in conclusions; whereas in our observation of acute diseases such errors are less likely, because we are accustomed to reviewing the whole course of the malady in a few days, or at farthest weeks, of time. No other chronic disease of the nervous system is so much talked about by the laity, lawyer or incompetent physician, and like ovaritis and appendicitis, the frequency with which tabes is diagnosticated gives cause for doubts as to a right observation and interpretation of symptoms. The indefiniteness of the name enhances its popularity, and the chronicity of the malady makes it a convenient receptacle for all symptoms suggesting cord disease, the incorrectness of which may be difficult to demonstrate. Moreover, the cerebral vagaries and spinal symptoms incident to a depreciated condition of the nervous system may cause—not alone in the inexperienced physician—a suspicion of tabes, thereby casting an irreparable gloom over the mind of a person afflicted with the modern and euphonious neurasthenia.

Early recognition of tabes is desirable not alone in our treatment, but for prognosis; yet the wider our observation of cases, the greater is our surprise at the multiplicity of the symptoms and their order of appearance, often causing the most accurate observer some anxiety in making a diagnosis, until he has made repeated examinations, or can at one sitting get a complete and intelligent clinical history covering a long period of time; for until degeneration has begun in the cord, symptoms presenting indisputable evidence of the malady are wanting. The sensory symptoms, so often preceding any motor manifestations, are frequently regarded as rheumatic, and if accompanied by digestive disorder with occasional vomiting, may cause our attention to be fixed on chronic gastritis with muscular rheumatism. We would be surprised at our easy transition to a different conclusion, if on closer examination we have revealed to us a fact, that the pains are confined to the lower extremities, intermittent in time, and lancinating in character; while the vomit appeared at intervals wholly independent of the time when food was taken, and was not immediately preceded by nausea or gastric distress. In the event of such evidence, we may justly suspicion a case of tabes. Moreover, symptoms essential to the complete clinical picture, but as yet not fully developed, or having appeared, are forgotten or considered by the patient as being wholly unimportant, may be brought into view by a careful retrospective history of the case. If the ataxic condition is uppermost in the patient's mind, and is especially annoying during his nocturnal excursions, he may be entirely unconcerned about the occasional darting pains in the bladder, bowels, rectum or anus, and ready to explain the paroxysms of dyspnea or motor impairment of the glottis as a result of "a little cold," but in the absence of pulmonary cardiac, cystic or bowel disease, such symptoms having existed or now present should form collateral testimony of positive value in the tabetic. If peripheral limitation of vision is noticed, the onset being rapid, then gradually retarding in progress until months pass before perceptible changes in the field of vision are noticed, the seeming stay of progress should not lend strong hopes for a favorable issue, since gray degeneration of the optic nerve in tabes is first rapid, then retarded, and usually centripetal in course. Pupillary reaction to light is lost. As between the hyperesthesias, anesthesias, paresthesias and pains of tabes, we may rightly regard the latter as the earliest to appear, most annoying in character, and persistent in duration. They are lancinating, come without warning, and are prone to greater severity at night, but unaccompanied by febrile disturbance and not of the short duration commonly seen in the early stage of a multiple neuritis. Impairment of sensation, though most frequent and of greatest severity in the lower extremities, may first appear elsewhere.

In the records in my case-book, appears the evidence in the case of a physician under my care for four years, whose early pains were in the back and hip muscles; he also complained of a sense of constriction of the body, but unmarked by a zone definitely localized. If anesthesia be present in any case under observation, it is interesting to note its extent, for in tabes it will invade the deeper tissues as well, and muscular contraction by the electric current, or the pains of pleurisy, may be unfelt. Another point of great value in differential diagnosis is the presence of inco-ordination of movement, without loss of motor power; this is a characteristic of tabes, and may for months or years precede all sensory disturbance.

Again, the early manifestations of motor disorder may have been so lightly considered by the patient as to have escaped his notice, or been forgotten when suffering from subsequent lightning pains; this can be easily accounted for, because motor power was not impaired, but the evidence is of paramount importance when we remember that ataxia in tabes differs in nowise from inco-ordination incident to combined lateral and posterior column sclerosis, but in this latter, a history of muscular weakness, with *early* exaggeration, then subsequent loss of knee-jerk, is the rule, whereas in tabes increased knee-jerk never occurs, and its disappearance is an early symptom.

Absence of the knee-jerk and the existence of ataxia,

are essential features in the clinical picture of tabes, yet their appearance in so many non-tabetic affections of the nervous system tends to nullify their importance in differential diagnosis, unless they are stable, and supported by other evidence.

Articular enlargement, pointed out by Charcot and insisted upon as frequently an early symptom, has been verified by several medical gentlemen of note, and merits our careful observation, as its presence may be the one symptom needed to the unfolding of a true case of tabes. I have been unable to verify, and am unwilling to accept as true, the statement recently current in several medical journals, that absence of pain in the popliteal space, on extension of the leg with extreme flexion of the thigh, is an early and positive proof of tabes; since the same clinical effect may be produced by a traumatism or disease limited to the anterior crural nerve. If of differential diagnostic value at all; its existence must be bilateral. Moreover, the absence of knee-jerk as a common factor in either affection cancels its diagnostic value, while motor weakness and muscular wasting—if present—negative any tabetic assumption. In a large percentage of tabetics the ataxia is a late symptom, and in such cases it is doubtless true that the lancinating pains are more constantly accompanied by optic atrophy and arthropathies.

Localized sweating was a noticeable feature in two cases under my observation. The first was unilateral in extent, the second was limited to the face, neck and arm of one side. The first one of these was seen by Dr. C. K. Mills of Philadelphia, who verified our diagnosis and noted this peculiar vasomotor disturbance. That this symptom belongs peculiarly to tabes remains an open question, for other cord or spinal nerve root affections may find *direct* expression in the same symptom or through the sympathetic system. In either case its differential diagnostic value becomes void.

THE THERAPEUTIC VALUE OF THE VARIOUS ANTI-MALARIAL AGENTS.

Presented to the Section on Materia Medica, Pharmacy and Therapeutics, at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver, Colo., June 7-10, 1898.

BY J. R. GILBERT, M.D.

DALLAS, TEXAS.

Under this title we must at least give a limited number of drugs a hearing, though it be near impossible to consider each that has been given as an anti-malarial agent, for most, if not every drug found in the materia medica, has at some time received credit for its anti-malarial effect upon the human economy.

Before we enter upon the therapy of the subject of malaria, we should know what the pathology of the trouble is, so that we may intelligently administer those remedies that will the earliest counteract or destroy the pathologic condition that exists, with the least detriment to the human organism.

We know that when a person is inoculated with this bacillus malariæ, he will surely have a malarial fever. While there is a slight difference in the germs that cause the various forms of malarial fever, they are practically the same, for the agent that will destroy one will also destroy the other. There have been a variety of opinions expressed as to how this organism enters into the blood. Some are earnest advocates of the avenue of entrance being the air-passages, and others the alimentary canal. And those who calmly sum up all of the evidence and weigh it well in the balance, must be forced to the conclusion that the malaria bacillus enters both by the lungs and alimentary canal. One may become infected from water, another from food; and he who sleeps in a low altitude inhabited by this germ will most surely become the victim of this familiar disease, malaria.

Since we know what our condition is, when to look for paroxysms, and their cause, the next thing to consider is whether we can find, in our great armamentarium, an agent that we can diffuse into the blood of our patient, which will destroy the bacillus, and at the same time not do material damage.

When we look over the past, we find the housewife and the physician both endeavoring to administer to the wants of the wretched mortal who is apparently trying to shake the cords out of the old bed. One in his or her effort is drenching the poor sufferer with hot teas when he is already afire, another giving some herb that *they say* is good for *chills*. On and on they went, until at last, by mere accident, the great specific was discovered.

There are but few diseases for which we possess anything near a specific, but to the great relief of suffering humanity, we have ever ready in our armamentarium that drug which, when administered so that it may become diffused into the blood, will destroy the *bacilli* malariæ, and do no hurt to the cells that go to make up the human body. This drug that is known in every household is *quinin*. Now, since we have a specific for the disease in consideration, it only remains to consider how it should be administered to attain this end and the helpful adjuvants, and last but not least, what we are to do when the patient's idiosyncrasy positively prohibits the use of our great boon to humanity.

Quinin, the great prime agent, has been administered in many different ways, and every recent text-book gives the various methods of administration and suggests the best way of administration, and those who are without experience in treating malarial fevers will find there are those minute points of technic that are only acquired by experience that they must learn.

I will say nothing of the way to administer this drug by the stomach, because I can add no more than all good, recent authors have laid down as rules to follow. I will make a few suggestions on the two much-neglected methods of quinin administration, viz., hypodermic and intravenous. It is only to those who live in the intensely malarious districts that these two methods will be of much interest practically, for stomach administration will suffice in all mild cases, as this drug will be taken up by assimilation; but when the physician is called to see a patient with a malarial paroxysm that is commonly called a congestive chill, and perhaps has reached that state of malarial hematuria and hematemesis where absorption or assimilation through the natural avenues is impossible, we must then reach our conclusion very rapidly for the bacilli malariæ are causing such a combustion in the blood that the life of the individual will soon be gone, unless we can introduce into the blood that agent which will destroy the bacilli.

Hypodermic use first suggests itself to us, and when we take the soluble salts of quinin, such as the muriate, we can usually get enough of the drug into the circulation to destroy the great adversary. But sometimes we are too late to depend upon even the hypodermic injection into the subcutaneous tissue, for

death is so near at hand that the circulation is not sufficient to carry the drug into the volume of blood of the body from the capillaries. In this our dire extremity, if we inject a quantity, say a half-dram, into a vein, and use circulatory stimulants, we may often rob the grave of a victim.

The great object to be ever kept in view, for all know how to administer, is that if you can get this great germ-destroyer into the blood in time, where the germ of malaria is only found, you can save that poor mortal from an untimely grave. Then it becomes our duty to familiarize ourselves with the methods of hypodermic and intravenous medication.

For those who have the idiosyncrasy for quinin we will find salicin and salicylate of soda of great advantage. When given in large doses, it will have quite a satisfactory result. But fortunately for all, we seldom find a patient who will not stand some of the salts obtained from the Peruvian bark.

In old chronic cases it is necessary to give something else attention beside the disease germ. For after a person has long been the victim of malaria, he is sure to suffer from some weakened organ that has received the brunt of the burden in carrying the great and complex machine through the siege of poison that has been pouring acid on the polished plates and rusting the surface until it has overworked and loaded up the liver, kidneys and spleen, until a few more months among this poison would return them whence they came. This brings us, not to anti-malarials, but to that part of our armamentarium marked alteratives, and from them we select those best suited to the individual case. Arsenic and iodin will often be our selection, for in them we find that while we restore organs to their natural function we brace and tone up the nervous system, that has been shaken around for months, and made subservient to all emotional and outside influences.

There are other alteratives that will to some degree answer our purpose, but those are exceptional cases where arsenic and iodin will not render most good in chronic malaria. So, in our summing up of the therapeutic value of various anti-malarial agents, there are few drugs we need consider. We have the specific for the malarial poison, and by closely studying the complications and administering to them properly, we will relieve many who now suffer from crippled organs caused by long-continued malarial fevers.

TREATMENT OF CONGENITAL TALIPES

Presented to the Section on Diseases of Children at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver, Colo., June 7-10, 1898.

BY HARRIET E. GARRISON, M.D.

DIXON, ILL.

As I am not an orthopedic surgeon, in assigning me the task of preparing a paper upon the treatment of congenital talipes our worthy secretary has given me a burden which I feel unable to carry. What I desire to present to this society are the results obtained in the immediate treatment of the very few cases of congenital talipes which have occurred in my obstetric practice. It does not usually fall to the lot of a country practitioner to have many cases of congenital talipes, but we meet them occasionally at the most unlooked-for times and places, and it behooves us to be prepared for the unexpected.

One of the great benefits to be derived from a country practice is the necessity for alertness to recognize and preparation to cope with any form of disease or surgical emergency, for at the time there is the greatest demand there is the least opportunity to procure a skilled specialist. Unless a physician is willing to give patient study to every branch of medical science he should never become a country doctor. For twenty years I practiced obstetrics in my general country work without meeting a case of talipes, and then in fifteen months I had three cases.

Case 1.—I was in the country, six miles from my office, and although I bathed the child I did not notice anything abnormal. The second day the father visited my office to tell me he thought one of the baby's ankles was out of joint. I immediately visited the child and found the right foot abducted to the third degree of talipes. There must have been an increase in the abnormal position since my visit or I could not have failed to notice it in the bath. The abduction had produced luxation of the joint, as I could feel the articulating surface of the tibia grate upon the oscalcis and astragalus as I made gentle pressure on the joint with thumb and forefinger of the left hand, while I slowly drew the foot into position with my right hand. The foot and leg had previously been bathed in very warm boracic acid solution and, while held in position slightly adducted, was bandaged lightly with a narrow gauze roller bandage from the toes to near the knee. The bandage was then dampened and a little plaster-of-Paris dusted over it and allowed to dry while the foot was held in position. The dressing was left in position two weeks and then was removed by the mother. The mother was directed to keep watch of the baby's toes, that they remained the right color, that there might not be any danger from the pressure; and she was instructed how to apply gentle massage to the joint and adductor muscles every day after the bandage was removed. I did not see the child until it was nineteen months old, when it was brought to my office for treatment for the ankle, which was swollen and tender, from a wrench which had been given it by the child catching its foot in between two boards. The faithfulness with which the mother had carried out the massage treatment could be seen in the superior development of the muscles of the right leg over those of the left. There was still slight extension of the foot on the ankle, but not as much as in the left leg. The child had walked from the twelfth month. This extension of the foot on the ankle and a slight tendency of the shoes to wrinkle on the inside was all that remained of the talipes. As the child was wearing cloth buttoned shoes I advised a well-fitting pair of leather, laced, and if these wrinkled, to have the inside further strengthened by a piece of stiff leather.

Case 2 was five miles in the country in another direction from No. 1, and was a case of talipes calcareus, with the extension surface of the toes resting against the foreleg: this was accompanied by flat foot. The outer and inner extensor tendons of the foot were contracted until they stood out like whipcords, and the deformity seemed due to this contraction and a little displacement of the fourth tarsal bone. The foot could be easily brought into position, which was all the treatment given on the day of birth, with direction to the nurse to draw it into position whenever the baby received attention. As there was no improvement on my visit the second day, I replaced the tarso-metotarsal articulation, applied a pad of folds of gauze over the joints and bandaged from toes to above the ankle while the foot was in correct position. This held the foot properly and the nurse was directed to keep it on as long as it stayed in place; but to notify me as soon as there was any appearance of displacement of the foot. I saw no more of the child until it was over five months old, when I went to the house for the purpose of inspecting the foot, and could not tell which foot had been deformed, as they were both straight and used with the same freedom and correct movement.

Case 3 was double equino-varus of the first degree, complicated with bow-legs and knock-knee. As the child was given in care of a trained nurse, and as she did not think the condition serious enough to need any attention, nothing was done until the child was a month old, when I was called to clip the fremum linguæ for tongue-tie. At this time the mother called my attention to the fact that when the baby contracted its feet they turned in and never out. I pointed out the curvature in the legs and tendency of the knees to come together and advised a system of massage to strengthen the muscles of the legs. In the course of six weeks, the mother told me, that the feet were just as likely to turn out as in when flexed. At the present time, six months later, the legs are very much straightened and there is no appearance of talipes.

It hardly seems worth while to dwell on the probable cause of this condition in the three infants, but the same factor was present in all three—mothers below the normal and fathers tall. This was especially noticeable in Case 3, as the mother's regular weight is 95 pounds and father's 175. The child weighed 8 pounds and was 19 inches long. Cases 2 and 3 both had a prominent vertebra. The twelfth dorsal vertebra was prominent, as though the spine might have been sharply flexed at this point during intra-uterine life. In these cases the mothers were instructed to apply extension to the spine every night by placing the child across the knee with the shoulders and hips suspended and at the same time to apply gentle massage the full length of the spine and legs. I have never found a mother who was too careless or lacked sufficient intellect to apply the massage systematically, after the benefits to be derived from it had been explained.

In the treatment of congenital talipes my experience leads me to believe that the earlier it is begun the more easily the balance between the antagonizing muscles is restored and that every child's feet should be critically examined to see if the muscle-balance is even, and if not, efforts to restore it should begin immediately.

RECENT EXPERIENCES IN MILITARY SURGERY AFTER THE BATTLE OF SANTIAGO.

ON BOARD THE HOSPITAL SHIP "RELIEF," JULY 22, 1898.

WOUND INFECTIONS.

Military surgery is no more nor less than emergency surgery in civil practice. The surgeon in daily practice has learned long ago that every accidental wound must practically be regarded and treated as an infected wound. In this respect the military surgeon of today has the advantage over his colleague in civil practice in knowing that the small caliber bullet inflicts wounds which *per se* are more often aseptic than septic. Our recent experience in Cuba has shown that the small jacketed bullet seldom carries with it into the tissues clothing or any other infectious substances. Most of the wounds of the soft tissues, uncomplicated by visceral lesions, which in themselves would become a source of infection, healed by primary intention in a remarkably short time. If infection followed it usually did so in the superficial portion of the wound in connection with the skin, and what is more than suggestive, the wound of exit was more frequently affected than the wound of entrance. This can be readily explained from the larger size of the wound and more extensive laceration and tearing of the tissues. In many of the cases ideal healing of the wound did not occur, owing to a subsequent limited superficial suppuration of the wound. The deep tissues were seldom implicated in such cases. I have reason to believe that some of the compound fractures which are now suppurating had such a source of infection, that is, the extension of a superficial infection to the seat of fracture. Two weeks have now elapsed since the battle of Santiago was fought and we are now in a position to inquire more critically into the manner in which the wounds became infected. The many failures in protecting the more serious wounds against infection are attributable to three principal causes: 1. Inadequate supply of first dressing. 2. Faulty application of first dressing. 3. Unnecessary change of dressing. The medical officers with the regiments and in the field hospitals were hampered in their work by an insufficiency of proper material. The rapidity with which the invasion was planned and executed, the difficulties encountered in transporting the hospital supplies to the front and the unexpected large number of wounded readily explain the lack of dressing material when it was most needed. Many of the dressings were too small and not sufficiently secured to keep them in place in transporting the wounded from the front to the field hospitals. As a rule, not enough attention was paid to the immobilization of the injured part, an important element in securing rest for the wound and in guarding against displacement of the dressings. It is a source of regret that plaster-of-Paris dressings were not more frequently employed in the treatment of gunshot fractures of the extremities. Another very palpable evil in causing infection was the too common practice of unnecessary change of dressing. The transfer of patients from one surgeon to another could not be avoided. Patients brought from the first dressing station to the field hospital usually were subjected to a change of dressing and, when a few days later they reached the General Hospital at Siboney, they had to undergo the same ordeal and often not only once, but as often as they came into the hands of another surgeon. Patients not thus treated were dissatisfied, as the laymen are still laboring under the erroneous impression that the oftener a wound is dressed the quicker it will heal. It is difficult to eradicate such a deep-rooted and time-honored belief, and patients will continue to clamor for a change of dressing, and the good-natured, hard-working surgeons only too often yield to such unreasonable requests. The evil of meddlesome surgery has become very apparent during our brief Cuban campaign and has taught us an important lesson that must be heeded in the future. Our military surgeons must learn to realize the value and importance of first aid dressing. In all cases where the first examination does not reveal the existence of complications which require subsequent operative treatment the diagnosis tag should convey this important instruction: "*Dressing not to be touched unless symptoms demand it.*" Such instruction is significant and must be followed to the letter by all surgeons in subsequent charge of the patient.

I am satisfied more than ever of the necessity of including in the first-aid dressing package an antiseptic powder. For years I have used for this purpose a combination of boracic acid and salicylic acid, 4:1, with the most satisfactory results. I am also partial to sterile absorbent cotton for this particular purpose, as it constitutes a more perfect filter than loose gauze. A teaspoonful of this powder dusted on the wound forms with the blood that escapes and the overlying cotton a firm crust, which seals the wound hermetically. Should the primary dressing become saturated with blood, the same powder should be dusted over the wet dressing, and an additional compress of cotton is added to the dressing. After the first dressing has been applied it should not be removed except for good and substantial reasons. Much can be done in the after-treatment in the way of adjusting the bandage and in immobilizing the injured part, but the first dressing must remain unless local or general symptoms set in which would warrant its removal. Malaria and yellow fever, that crept in upon us so insidiously, are responsible for many unnecessary changes of dressing. The appearance of fever in a wounded man naturally leads to the suspicion that there is something wrong in the wound. Many dressings were changed on this ground, nothing abnormal was found in the wounds, and a day or two later the nature of the fever was recognized and the patients were either given quinin or were sent to the yellow fever hospital, in accordance with the diagnosis made. *Every change of dressing, more especially in military practice, is attended by risk of infection and must be scrupulously avoided, unless local or general symptoms indicate the existence of complications which demand surgical intervention.* In writing the above it is not my intention to cast any reflection on the work of our surgeons; on the contrary, I willingly bear witness to the abiilty, faithfulness and unselfishness with which they have done their duty. A better and more conscientious group of medical officers it would be difficult to select anywhere. The results on the

whole are excellent, but I am hopeful that they can be improved in the future by placing more stress and attention to the value and importance of the first dressing, and wish to repeat again and in a most forcible way the language of the late Professor von Nussbaum: "*The fate of the wounded rests in the hands of the one who applies the first dressing.*" If this is true in civil practice, its meaning can not be misinterpreted in military surgery.

EFFECTS OF BULLETS ON THE SOFT TISSUES.

In recent cases the small tubular wound made by the Mauser bullet was surrounded by a narrow zone of contused tissue, and the wound space itself filled either with liquid or coagulated blood. A few days later the wound itself was found surrounded with an area of suggillation, which varied in extent according to the nature of the tissues and the amount of extravasation. In cases in which the bullet passed through the tissues some distance, and not far from the surface of the skin the location and direction of the wound canal was indicated by discoloration of the skin a few days after the injury occurred. In a number of cases of aseptic wounds in which the bullet had lodged in the tissues and was removed a week or ten days later, I had an opportunity to study the remote effects of the injury on the tissues. In all cases the swelling of the tissues at this time had nearly or entirely obliterated the tubular wound, the location of which was indicated by a dark discoloration, parenchymatous extravasation, remains of fluid or coagulated blood, and a limited area of edema and infiltration. These conditions served as a useful guide in following the course of the bullet. The bullet itself was usually found loose in a small cavity filled with liquid blood or blood serum, while a more extensive zone of infiltration indicated the early stage of encapsulation. I have no further doubt but what the new bullet will become encapsulated and remain harmless in the tissues, as readily or more so than the old-fashioned leaden bullet. In isolated cases late suppuration at the seat of the bullet resulted in the formation of a circumscribed abscess, a complication which aided the surgeons in locating, finding and removing the missile. It was a surprise to us all to find that in more than 10 per cent. of all the wounded, the bullet was found lodged in the tissues, a vastly greater number than we had any reason to expect. The reason for this became apparent when we began to study the condition of the bullets removed. A large proportion of the bullets removed were found deformed, showing that they were deflected bullets, which had struck a hard object or passed through a resisting medium before they reached the final object for which they were intended. The ground upon which the battle was fought is stony and covered with trees and thick underbrush, furnishing the most favorable conditions for deflection of the missiles. Some of the firing was done at a great distance, so that occasionally a spent ball was found in the soft tissues without injury of the bones. Such a bullet is shown in Fig. 1. The bullet is a nickel encased Mauser projectile, natural size, the jacket perfect, and was removed from behind the tibia about four inches above the ankle joint. It entered the calf of the leg below the popliteal space and never touched the bone. Fig. 2 represents the same kind of a bullet, the point flattened and mushroomed, removed from the head of the tibia. This bullet was probably fired from a great distance, and the deformity was produced by the bone. Figs. 3, 4, 5, represent a nickel-clad bullet very much deformed. It was found lodged in the deep tissues of the thigh about two inches from the wound of entrance, slightly overlapping the femur near the middle of the shaft. The bullet evidently struck a stone behind its point, and was deflected before it entered the tissues. It was much flattened and curved. Fig. 3 shows the convex side point of bullet and jacket perfect. Fig. 4 shows the edge and curve of the bullet. Fig. 5 represents the convex side, showing a wide rent in the jacket indicated by the dotted lines, the lead exposed between them. Figs. 6, 7, 8, illustrate the deformity of a large caliber brass-clad bullet. As the bullet was removed from the soft tissues from a wound without bone injury, the deformity must have been caused outside of the body. The bullet is flattened on one side from a point near the tip to near the base of the lead core. Fig. 6 shows the convex side; behind the last transverse groove the lead is exposed. Fig. 7 illustrates the flattened side of the dotted line, indicating a defect in the brass jacket. Fig. 8 shows the margin of the bullet, and the location and extent of flattening. As the Spanish army is armed exclusively with the Mauser rifle, the weapon from which this bullet was fired must have been in the hands of a volunteer, or possibly a Cuban.

Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

Fig. 5.

Fig. 6.

Fig. 7.

Fig. 8.

THE VALUE OF THE X-RAY IN MILITARY PRACTICE.

The use of the probe as a diagnostic instrument in locating bullets in modern military service has been almost entirely superseded by dissection and the employment of the X-ray. If from the nature of the injury and the symptoms presented the bullet is located in a part of the body readily and safely accessible to the knife and it is deemed advisable and expedient to remove it, this can often be done more expeditiously and with a greater degree of certainty by enlarging the track made by the bullet than by relying on the probe in finding and on the forceps in extracting the bullet. If, as is often the case, the whereabouts of the bullet is not known, its presence and exact location can be determined without any pain or any additional risks to the patient by the use of the X-ray. All of the bullets removed on board the hospital ship *Relief* were located in this manner. Dr. Gray, an expert in skiagraphy, who has charge of the scientific work of the floating hospital, has been of the greatest service to the surgeons in enabling them to locate bullets and in guiding them as to the advisability of undertaking an operation for their removal. His large collection of skiagraph pictures will also furnish a flood of new light on the effects of the small caliber bullet on the different bones of the body. Dr. Gray's work will constitute an essential and enduring corner-stone of a much-needed modern work on military

surgery. The skiagraph has enabled us to diagnosticate the existence or absence of fracture in a number of doubtful cases in which we had to depend exclusively on this diagnostic resource. In fractures in close proximity to large joints the X-ray has been of the greatest value in ascertaining whether or not the fracture extended into the joint. In one case of gunshot wound at the base of the thigh in which the bullet passed in the direction of the trochanteric portion of the femur, opinions were at variance concerning the extent of injury to the bone. Some of the surgeons made a diagnosis of fracture while others contended that there was no fracture but believed that the bullet had made a deep groove in the anterior portion of the bone and had possibly opened the capsule of the joint at the same time. The X-ray picture clearly demonstrated the absence of fracture and the existence of a deep furrow with numerous fragments on each side. The X-ray apparatus also proved of the greatest practical utility in showing the displacement of fragments in gunshot fractures of the long bones, which enabled the surgeons to resort to timely measures to prevent vicious union. The fluoroscope has greatly added to the practical value of skiagraphy. In the light of our recent experience the X-ray has become an indispensable diagnostic resource to the military surgeon in active service, and the suggestion that every chief surgeon of every army corps should be supplied with a portable apparatus and an expert to use it, must be considered a timely and urgent one.

THE WOUNDED OF THE BATTLE OF SANTIAGO.

It will be of interest to the profession to learn something definite of the nature of the wounds and their more remote results on the victims of Spanish bullets in the battle of Santiago. Two weeks have passed away since the battle. A considerable number of the wounded have died since, and many have left for the United States on the *Olivette*, *Solace* and transport ships. Among the 130 wounded now on the way to their homes on the hospital ship, *Relief*, I have selected a number of cases of more than usual interest, for the purpose of studying the effects of the small caliber bullet, immediate and remote, on the different organs and regions of the body. It is my intention to give the course of the bullets by marking on the diagrams accompanying the report of each case, the wound of entrance and exit. A study of the diagrams will show that deflection of the bullet in the body is exceptional. As a rule, the wound canal was in a perfectly straight line from one wound to the other. By following the track of the bullet it is not difficult to determine the organ or organs implicated in the injury. I shall classify the cases so as to embrace gunshot wounds of 1, the head; 2, the neck; 3, the spine; 4, the chest; 5, the abdomen; 6, the extremities.

GUNSHOT WOUNDS OF THE HEAD.

To my own knowledge, a number of gunshot wounds of the head that survived long enough to be transported to the general hospital at Siboney, died within twelve days after the receipt of the injury. In all of the cases intracranial infection was the immediate cause of death. Encephalitis and leptomeningitis constituted the fatal complications. The beginning of the intracranial inflammation was always announced by cerebral hernia, which in size was proportionate to the extent and intensity of the inflammatory process. The surgical treatment resorted to in most instances proved powerless in limiting the infection. If these cases had been studied with a little more care during life, and if postmortem examinations had been made more frequently, valuable material could have been obtained for the advancement of the as yet imperfectly developed science of cerebral localization.

Case 1.—Fred Shockley, Company D, Tenth Cavalry, wounded July 2. When injury was received the patient was lying on his abdomen with chest and head extended at the base of the ridge occupied by the enemy, which position readily explains the unusual course of the bullet. The bullet struck the occipital base at a tangent, producing a comminuted fracture with depression; it then made a deep groove in the back of the neck and then re-entered the body on a level with the first rib to the left of the seventh cervical vertebra, passed through the chest and escaped in front through the second intercostal space, a little to the left of the mammary line (Fig. 9). Soon after the injury was received he coughed up a

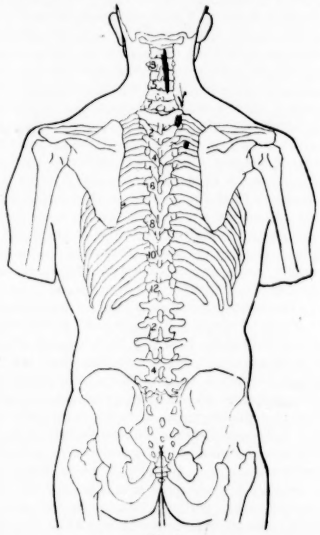


Fig. 9.

small quantity of blood; no hemorrhage since or any indications of pneumothorax, pneumonia or pleuritis. The chest wounds healed by primary intention. At first had convulsions for a few moments; no loss of consciousness, but clonic spasms of both arms. At present intellect is unimpaired; has some headache and a sensation of throbbing in the head; some impairment of motion and sensation of right leg and complete loss of motion of toes of right foot; has some pain in eyes and slight dimness of vision.

Case 2.—Patrick Ward, Company I, Third Cavalry, admitted from hospital at Siboney to hospital ship, *Relief*, July 11. Injury probably received in the same manner as in Case 1. A large defect in the occipital bone marked the wound of entrance and exit in the skull, the opening enlarged by operation. The

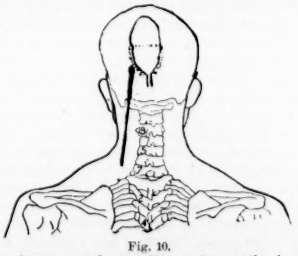


Fig. 10.

linear wound below, and extending as far as the last cervical vertebra, was undoubtedly made in following and removing

the bullet. The cranial defect and course of bullet are outlined in Figure 10.

A cerebral hernia projects from the opening, and a deep-seated cerebral abscess was recently discovered, opened and drained. In part the hernia is covered by skin. Both parietal bones are the seat of a comminuted fracture. Mental faculties not impaired; no focal symptoms. The patient is losing strength rapidly and will soon succumb to the intra-cranial lesion.

Case 3.—Jerome Russel, Company A, Thirteenth Infantry, was wounded July 1. When brought on board the *Relief* a cerebral hernia about the size of a hen's egg was found over the sagittal suture, an inch in front of the occipital protuberance. The wound was suppurating, and digital exploration revealed a small circular opening directly in front of the occipital protuberance. This opening was evidently the wound of entrance, and by operation, had been connected with the wound of exit by a channel an inch in length and half as wide. The hernia occcupied the wound of exit. A number of loose fragments of bone have been removed at different times. There is marked hemiplegia on the left side, the forearm is strongly flexed and in close contact with the chest. Sensation is not diminished; speech clear, but ideas confused; pupils react to light; incontinence of urine; extensive decubitus over sacrum; temperature 100.5 degrees F.; pulse and respiration normal.

Case 4.—B. C. Parker, Company C, Fourth Infantry, was wounded July 1. The bullet entered the left temporal region, comminuting the bone in that region extensively, and escaped over the left frontal eminence (Fig. 11). The cranial defect was increased by the removal of a number of loose fragments. There had been quite a profuse sero-purulent discharge from

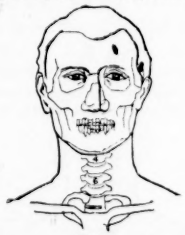


Fig. 11.

the wound. The only focal symptom consists in a pricking sensation in the right foot or chest when the wound is being dressed. His mind is clear most of the time, occasionally slight confusion and wandering. The absence of cerebral hernia in this case is the surest indication that the infection is local.

GUNSHOT WOUNDS OF THE NECK.

Case 5.—Lieut. Albert Scott, Company C, Thirteenth Infantry, on July 1, while standing with his company at the

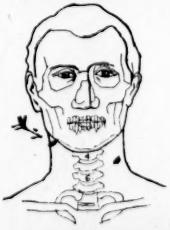


Fig. 12.

foot of a hill, during the advance on Santiago, received a wound in the neck. The bullet entered the neck on the right side just below the inferior maxillary bone, one inch in front of the angle of the jaw. The wound of entrance is a clean cut hole about the size of a lead pencil. The course of the bullet was backward and slightly downward, emerging at the back of the neck on a level with and to the left of the fifth cervical vertebra (Fig. 12).

At the moment the injury was inflicted he felt no pain in the wound, but he experienced a sensation as if he had been grasped by the wrists and thrown violently to the ground. The wound of exit is of the same size and appearance as the wound of entrance. Very slight hemorrhage. A few minutes after receiving the injury he was carried from the firing line by members of his company, and was soon transported to the First Division Hospital, where he remained for ten days, after which he was removed in an ambulance to the hospital at Siboney, a distance of seven miles over a very rough road, and a day later was transferred to the *Relief*.

He first became aware of the existence of the wound on the way from the field to the hospital. At the time he came on board the hospital ship he was voiceless, and made constant efforts to clear his bronchial tubes of mucus. Complete paralysis of right arm and leg, and partial loss of power in left arm and leg. Respiration normal, but an almost constant spasmodic cough, no control over sphincters, involuntary passages from both bladder and bowels, great debility and profuse sweating; complains of pain all over the body. Morphia and atropin given to subdue pain. A radiograph taken by Dr. Gray shows an injury of one of the cervical vertebræ, probably the fifth. Injury seems to be to the left of the body of the bone. Has received no treatment other than complete rest and a nightly anodyne as noted above, which secures a good night's sleep, and markedly diminishes the sweating. Has regained control of the sphincters, and is able to use bed pan and urinal.

July 19.—During the past six days there has been a decided improvement in the general condition of the patient. He is brighter in appearance, he can articulate more distinctly, and there is a decided return of power in the right leg. The right hand is still absolutely powerless, but the grip of the left hand is decidedly stronger. Appetite and circulation good.

July 21.—Improvement in general condition still continues. The external wounds healed by primary intention, and the scars can only be seen on making a very careful inspection. Trional and sulphonal have been substituted for the morphia.

Case 6.—Oscar C. Buck, Company F, Second Infantry, was shot by a sharpshooter hiding in a tree, July 11. The bullet

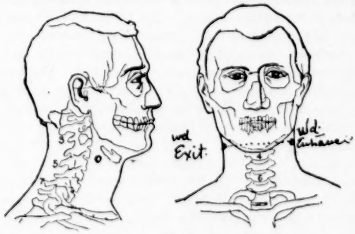


Fig. 13.

passed through the neck from side to side. The first and only evidence the patient had that he was injured was bleeding from the throat, the hemorrhage at first being quite profuse. Stiffness of the neck and pain on movement have been the only symptoms complained of since. The bullet entered over the sterno-cleido-mastoid muscle on the left side, about two and one-half inches from the mastoid process. The wound of entrance was circular and very small; the wound of exit on the same level but about half an inch nearer the spine (Fig. 13)

Three days later a small superficial abscess formed in the wound of exit, which was evacuated by dilating the wound. Both wounds were perfectly healed July 20. Judging from the course of the bullet it is difficult to understand how the principal nerves and large vessels of the neck escaped injury. This is one of those cases that require careful watching, as a traumatic aneurysm may develop later in the throat if the bullet injured the external tunics of either of the carotid arteries.

Case 7.—Charles F. Flickinger, Company C, Fourth Infantry, was wounded July 1, while lying down. The bullet entered the left posterior cervical triangle on a level with the spinous process of the fifth cervical vertebra, midway between the spine and the posterior border of the sterno-cleido-mastoid muscle, and emerged opposite the spinous process of the

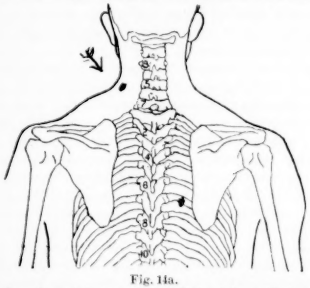


Fig. 14a.

seventh dorsal vertebra, and equidistant from that point and the posterior border of the scapula (Fig. 14a). The patient complains of severe pain in shoulders on attempting to move, but is free from any symptoms that would indicate any injury to the spinal cord. He was within 100 yards of the enemy when he was wounded.

GUNSHOT WOUNDS OF THE SPINE.

All cases of gunshot wounds of the spine in which the cord was seriously damaged have died, or will die in the near future. The immediate cause of death in such cases is either a septic leptomeningitis or sepsis and exhaustion from decubitus. Death from the first named cause takes place early as the result of infection of the wound and extension of the inflammation at the seat of the visceral injury along the meninges and surface of the spinal cord. The first case of this kind I saw was at El Caney a few days after the battle of Santiago. The patient was a Spanish prisoner. I found him lying on the bare stone floor of the village church. The bullet had entered over the center of the spine at the junction of the dorsal with the lumbar vertebræ, its course apparently being directly forward. Complete paraplegia below the seat of injury. The bladder was distended, nearly reaching the level of the umbilicus; incontinence of urine. The neck, trunk above the wound, and upper extremities rigid; fever; pulse rapid and small, countenance extremely pale. The wound was protected by a small dirty dressing, and was suppurating. I doubt not that the patient died in less than twenty-four hours after I saw him. Wounds of the spine without injury to cord were frequently attended by temporary paralysis varying greatly in degree and duration.

Case 8.—George Kelly, Company C, Seventeenth Infantry, was shot July 1, while lying in a prone position. The bullet, which was fired from a blockhouse on the summit of a hill, at a distance of about 600 yards, entered the body at a point a little below and at the middle of the right ilium, and emerged from the opposite side about three inches below the crest of the left ilium (Fig. 14b). The patient asserts that he suffered intense pain immediately after he was shot, and that he is now free from pain except when he attempts to walk. The pain thus caused he refers to the sacro coccygeal articulation. The wounds are healed, and the absence of paralysis is the best evidence that the contents of the spinal canal escaped injury, although the bullet must have passed transversely through the first sacral vertebra.

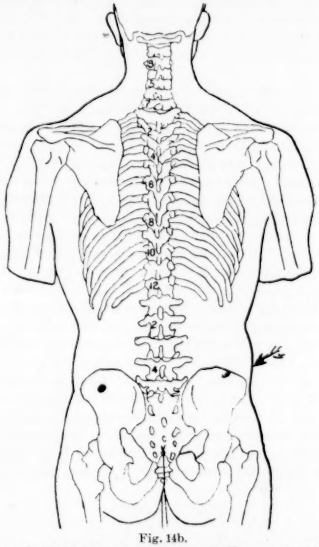


Fig. 14b.

Case 9.—John Robinson, Company C, Twenty-fourth Infantry. The bullet entered the supraspinous fossa of left scapula and escaped from the right lumbar region, having perforated

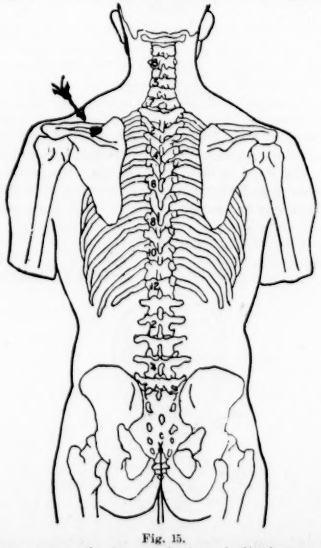


Fig. 15.

in its long course the lung, spinal cord, diaphragm and liver

(Fig. 15). Wounds healed in ten days. Expectoration bloody, complete paraplegia. Beginning extensive decubitus over sacrum and spinous processes.

Case 10.—Otto Derr, Company A, Twenty-first Infantry, was wounded July 2. Bullet passed through the chest from side to side from the post-axillary line on the right side to a corresponding point on the opposite side, on a level with the seventh intercostal space. Complete paralysis of motion and sensation below the seat of spinal injury. The wounds healed, but life was threatened at the time from a commencing septic decubitus.

Case 11.—Lewis W. Carlisle, Company K, Seventy-first New York Volunteers, was hit by a shrapnel in the back, on a level with the third lumbar vertebra, shattering the spinous and left lateral processes of the same. The missile was removed as soon as the patient reached the Division Hospital. As profuse suppuration set in and continued, the patient was anesthetized July 18, and a number of fragments of bone removed. A large abscess cavity in the right lumbar region communicated with the wound. The cavity was drained by making a counter-opening in line with Simon's incision. Impaired sensation in the right leg was the most important local symptom in this case.

Case 12.—Charles J. Reardon, Company C, Sixteenth Infantry, was wounded by a fragment of shrapnel which struck him as he lay on his back with his shoulders raised ready to fire. The wound was directly over the spine, on a level with the fourth dorsal vertebra, the missile evidently opening the spinal canal and injuring its contents. The foreign body remains imbedded in the tissues; its location so far has not been determined. Paraplegia is complete below the level of the umbilicus. On July 18 the patient was still alive, but an extensive moist decubitus became the direct cause of death in the course of a few days.

GUNSHOT WOUNDS OF THE CHEST.

It is well known that during the Civil War men had a better chance for life when the bullet passed through

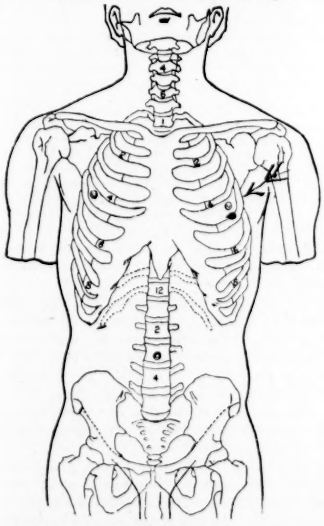
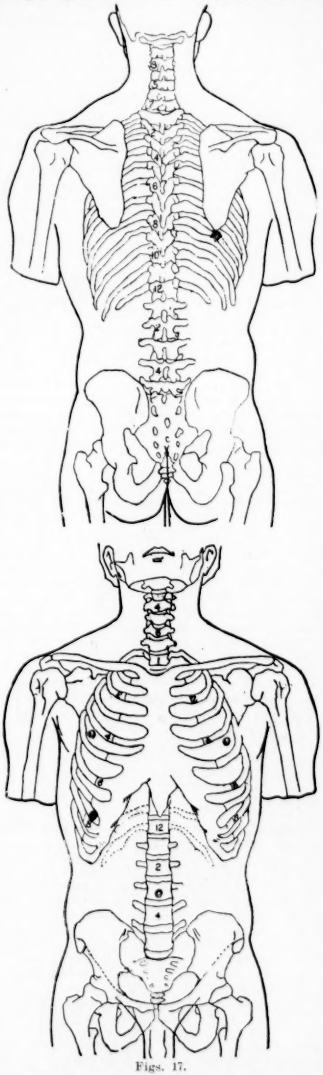


Fig. 16.

the chest than when the chest was opened and the ball removed. The same remains true now, although not to the same extent, as the small caliber bullet is less likely to carry with it into the chest clothing or other infective material. The number of cases of chest wounds that lived long enough to reach the hospital on the coast is still more astonishing, and what is surprising is the fact that unless the hemorrhage was



Figs. 17.

severe the symptoms were mild, some of the patients being confined to bed only for a few days. All of these cases were treated on the expectant plan, i.e., by dressing the external wound or wounds in the usual manner. In no instance was the pleural cavity opened for the purpose of arresting the hemorrhage.

Case 13.—Wm. A. Cooper, Company A, Tenth Cavalry, was wounded July 1. The bullet entered an inch below the left nipple, and escaped from the body an inch below the costal arch in the mammary line (Fig. 16). It is questionable whether the bullet opened either the pleural or peritoneal cavity, as the injury was not followed by any symptoms referable to visceral

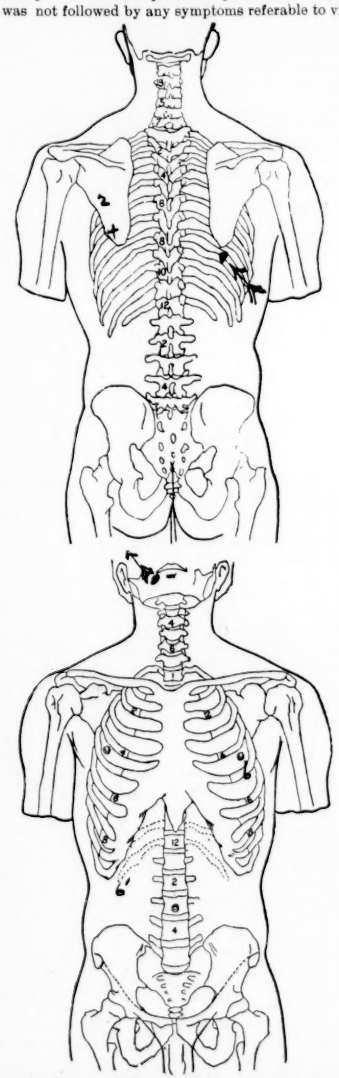


Fig. 18.

wounds of the chest or abdomen, although the course of the bullet was such as to give rise to the suspicion that either or both of these cavities might have been invaded.

Case 14.—Edward O'Flaherty, Company C, Sixteenth Infantry, was wounded July 2 by a 45-caliber ball from a bursting shrapnel. The projectile entered below the angle of the right scapula, passed through the lung, diaphragm and liver, lodging beneath the skin in front, between the seventh and eighth ribs (Fig. 17). Bloody expectoration for some time and slight rise in temperature.

July 12.—Temperature normal.

July 21.—Patient suffers but little inconvenience from his wound. No peritoneal or pleural effusion. General condition promises an early and complete recovery.

Case 15.—John B. Semca, Company G, Twenty-second Infantry, was wounded July 1, by a bullet which entered his back just below the angle of the left scapula, passed upward through the lung, neck and jaw and emerged through the alveolar process of the right bicuspid tooth, cutting the tongue slightly (Fig. 18). All wounds healed in a short time by primary intention. Hemoptysis profuse immediately after he was shot, and slight for the following few days. Left arm at first nearly powerless, with desquamation of skin of the hand. Function of the arm is returning gradually. In three weeks

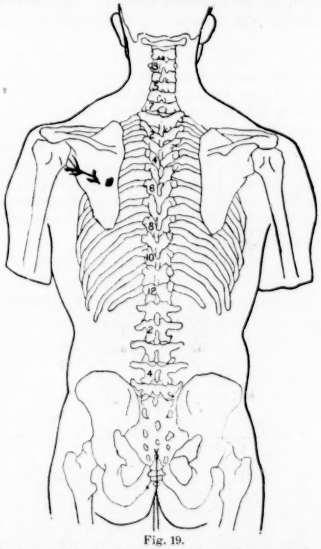


Fig. 19.

the patient was able to sit up for a short time each day. Physical examination of the chest at this time revealed nothing abnormal.

Case 16.—Winslow Clark, Company G, First Volunteer Cavalry, was wounded July 1, by a bullet which entered the chest by first perforating the left scapula through the infraspinous fossa, three inches above the angle and a inch from the spinal border (Fig. 19). No wound of exit. The probable course of the bullet was downward and forward. Some hemoptysis and fever. No vomiting of blood. The hemothorax was quite extensive and was relieved by tapping, a week after the injury. He is now (July 22) convalescing rapidly.

Case 17.—Arthur Fairbrother, Company C, Third Cavalry, sustained a perforating gunshot wound of the chest July 1. The bullet entered the chest just below the middle of the right clavicle (Fig. 20). No wound of exit. Hemoptysis rather profuse, followed by hemothorax. Has had fever, off and on, probably malarial. Patient was admitted to the *Relief* July 15. Wound not completely closed. On coughing, dark fluid blood

escapes. Nearly the entire pleural cavity filled with blood. Two days later three pints of dark fluid blood were removed by tapping and siphonage. Sputum at this time still bloody.

July 22.—Patient much improved. No signs of empyema. Hemothorax diminished, but may require a second tapping.

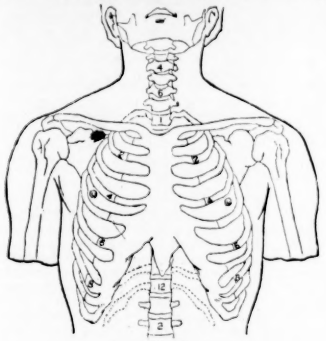


Fig. 20.

(To be continued.)

SOCIETY PROCEEDINGS.

Chicago Ophthalmological and Otological Society.

Regular Meeting held in the Stewart Building, Oct. 11, 1898.

Dr. COLEMAN occupied the chair. He exhibited a patient on whom he had performed Mule's operation some two weeks before, and who had been wearing the artificial eye for two days. The excursion of the eye is 25 degrees up and down, and 20 degrees out. The operation was followed by very little reaction, which he ascribed to the cauterizing of the inner wall of the sclera with 95 per cent. carbolic acid, and the free use of hot water.

Dr. HOTZ had examined many cases of Mule's operation, and found that practically the only advantage was that the sulcus in the upper lid under the brow was less deep than in the ordinary enucleation; that the movements of the artificial eye over the Mule's globe were not any greater than in ordinary enucleations.

Dr. CASEY A. WOOD had done Mule's operation twice. In one case the glass ball was promptly extruded, and the other case was lost sight of, so that the result was not known. He concludes that inasmuch as the thing that seems to be desired, i. e., the prominence of the prosthesis, is the principal source of subsequent danger from pressure, there is very little in the procedure to recommend over a proper enucleation or evisceration. He referred to the aluminum frames exhibited by Bryant at the meeting of the AMERICAN MEDICAL ASSOCIATION in Denver.

CONGENITAL DISTICHIASIS.

Dr. CASEY A. WOOD presented two cases, father and daughter. Both patients exhibited absolutely normal lids apart from the supernumerary cilia. In both cases the second row is of fine white hairs, on the inner margins of both lids, few of them impinging on the cornea. The latter is free from opacity and the conjunctivæ are practically normal. Occasionally some lashes touch the corneal surface and have to be extracted. There is a plain history of both patients having exhibited the condition from early infancy.

Dr. HOTZ had seen a case in which there was a row of eyelashes coming out directly from the posterior lip of the margin, faint, fine-looking hairs protruding from the lid about one-eighth of an inch. These were easily extracted, and were found to be quite long and seemed to come from the Meibomian ducts. After being pulled a few times they ceased growing. He suggested that electrolysis be tried in Dr. Wood's cases.

Dr. WOOD stated that he had intended to try the use of nitric acid inserted into the base of the lash by means of a fine toothpick. He had found it less painful and more thorough than electrolysis.

UNUSUAL INTOLERANCE OF MYDRIATICS.

Dr. HOTZ had seen a patient, 60 years old, in August, suffering from an attack of iritis. He had a previous attack some five years before, and had used atropin at that time. He had suffered more severely from the effects of atropin than from the iritis. The symptoms during this attack were characteristic, and in spite of the previous experience Dr. Hotz dropped scopolamin in his eye several times within an hour. The pupil dilated slowly and irregularly, and the redness of the eyeball was less, but the lids were edematous and swollen. The pupil was not well dilated, and duboisin was prescribed instead of scopolamin. This had the desired effect upon the pupil, but the lids were much swollen; the conjunctiva discharged a good deal of mucus; the skin of the cheek was much puffed, and at places serum exuded. Within twenty-four hours the whole right side of the face was intensely swollen; the skin furrows were deep and eroded, and crusts of dried secretion were found everywhere. The symptoms of iritis subsided very rapidly and the duboisin was stopped. Within twenty-four hours the swelling of the face began to subside and disappeared within four days. There were no constitutional symptoms.

Dr. COLBURN—I have had almost the same experience in the case of a cataract extraction. About two years ago I operated on the left eye, and atropin produced all the symptoms that the Doctor has described. Last winter I operated on the right eye, and I used duboisin instead of the atropin, and again I had a fearful eye. The lids were distended, the nostrils closed and both eyes and the whole of the face and neck were involved, and it looked very angry. I could give no other explanation than atropin poisoning. He again had all the symptoms that the Doctor speaks of; it was the most fearful case of apparent erysipelas that I ever saw. The recovery from the operation was not interfered with: the visual result was good.

Dr. WOOD had found that there was a dermal idiosyncrasy in many patients for atropin, and that a distinct dermatitis would arise when the drug was rubbed on the skin of the arm or leg, etc.

Dr. PINCKARD had had one case where a single drop of atropin, duboisin, or hyocin brought on very marked constitutional symptoms, but not any skin symptoms. The patient was a woman about 30 years of age.

SARCOMA OF THE LID.

Dr. PINCKARD—The patient, a woman 30 years of age, I first saw in May of this year. For the past two months she had noticed a gradually increasing swelling on the lower lid just to the outer side of the punctum. It was then about the size of a large pea, the skin being a trifle reddened, and the conjunctiva a dark red color. I thought that it was a chalazion and advised its removal. On making an incision into the tumor, however, I found it to be solid, and cut out a little piece which on examination proved to be sarcoma. The question of the differential diagnosis is certainly very difficult. The only peculiarity that I noticed, and which I probably should not have noticed but for the subsequent developments, was that the border of the lid was very much raised at the site of the tumor, thus disturbing the line of the lower lid. I have not found this to be the case with chalazion, the swelling generally extending only outward or inward, and not interfering with the line of the lid border. The patient was sent to the hospital, and under ether a large V-shaped incision, beginning at the inner canthus and to the outer side of the middle of the lid and joining about an inch below the lid, was made, and the whole section removed. The caruncle, the lachrymal sac and some of the orbital tissue were also removed. The outer half of the lid was joined to the skin of the nose and healed readily by first intention, leaving but a comparatively slight scar. Some few weeks later I saw the patient for the last time, and at the site of the scar there was a suspicious looking growth, which I thought was probably the return of the sarcoma. I heard from her some two weeks ago, and she states that this had disappeared. I do not see how it is possible to make a differential diagnosis between sarcoma and chalazion before a section is made into the tumor. Certainly in this case, with the possible exception of the lid edge, there was nothing characteristic. The patient was healthy in all other respects, and no doubt this was a primary sarcoma of the lid.

Dr. WESCOTT removed from a child, early in the summer, a tumor which extended the entire length of the tarsus and covered it very completely. Some three years before, Dr. Holmes had seen the case and thought it was a chalazion, and was surprised when he cut through the skin to find a solid tumor. Dr. Holmes curetted it, but it returned very slowly, and had been growing up to the time the child was brought to Dr. Wescott. The tumor was dissected out, and the examination showed it to be a pure angioma. There was no return in five months.

DRESSINGS OF CATARACT CASES.

Dr. COLEMAN—In the last three cases I did not apply a compress bandage, simply put a gauze shade suspended by plaster on the forehead, and covered that with a papier-mache shield, and I have never had less reaction than in those cases. We all very well know that in aged people, if we tie up the eye for forty-eight hours, we may produce a conjunctivitis.

IRIDECTOMY.

Dr. COLEMAN—No one has advocated preliminary iridectomy. Landolt has written the best article I have seen of late years on cataract extraction, and he says that beyond all controversy preliminary iridectomy offers the safest prospect for recovery. All things considered, for me preliminary iridectomy affords the greatest amount of success. In reply to a question as to the use of eserin, Dr. Coleman said: I question the efficacy of it in the simple operation. I would not use eserin to prevent prolapse, but atropin. The latter, by opening the gateway, takes the pressure of the aqueous off the posterior surface of the iris and thus prevents prolapse.

Dr. HOTZ—I have never divided the operation to save the patient annoyance and nervous excitement of two operations, when I can get along with one. I do not know whether there would be anything gained by, or any greater safety in the preliminary operation.

Dr. BULSON of Fort Wayne—In discussing a paper that was presented at the recent meeting of the British Medical Association, a noted ophthalmologist cited a case in which the wound, following removal of cataract, remained open for seven or eight days. This was supposed to be due to the fact that the incision had been made wholly in corneal tissue, which in the aged repairs slowly. I have recently had under my care a similar case, in which, owing to the unruliness of the patient, the incision was made wholly in the cornea. This wound remained with escape of aqueous, for a period of five days, and notwithstanding that a small iridectomy was performed no prolapse occurred. Under pressure bandage and the stimulating effect of hot compresses the wound closed very nicely. As to the use of eserin, I do not presume to speak from a great amount of experience, as I use the drug in exceptional cases only. I believe it to be irritating in a large percentage of cases and therefore prefer to limit its use as much as possible. I have seen weak solutions produce violent irritation, and for that reason have learned to look upon all applications of eserin with considerable suspicion.

Dr. WESCOTT—I am still doing the combination and hesitate to change. I have also seen decided irritation from a half grain solution of eserin, and my ordinary prescription is an eighth or quarter of an ounce. I believe in using atropin after extraction, but I do not begin it early, and frequently have omitted it until the fourth day.

Dr. PINCKARD—When I was the house officer in the infirmary in Boston, Dr. Chandler devised an operation and operated on fifty cases with a device which was quite ingenious. He argued that the prolapse of the iris was due to the gushing forth of the aqueous, carrying the iris with it. So after doing his extraction, he cut a small piece the size of a pin-head, out of the peripheral edge of the iris. The idea is certainly ingenious and, so far as I know, was original with him. By this means he left the pupil round, and that part of the iris with the hole in it was always covered by the upper lid, and through this hole fluids could pass to the anterior chamber and thus diminish the danger of prolapse.

Dr. ROBERTSON—After operations for cataract it is desirable to have as small a pupil as possible, that is, as small a clear pupil as possible. Whether you do a simple or a modified operation, there is nearly always some secondary cataract developed, and it is desirable to have a pinhole pupil through the secondary one, for the reason that you get a greater range of accommodation. The larger your pupil the less accommodating power you have left in the eye. There is one case I recall where the man had enough accommodation to see at a distance and read with the same lens, this, not on account of any true accommodation, but by reason of the pinhole pupil, all rays of light entering the eye being practically parallel. These patients can by squinting the eye, make pressure on the globe by the lids so that the eyeball is elongated by mechanic force. This would create an artificial myopia, and in such a way give the patient an artificial accommodation. This artificial myopia can exist to an unknown amount, and we are not unwilling to concede that we might develop 3.00 D. or 5.00 D., which would be changing the diameter of the eye only 1.75 mm. I do not think it makes much difference when you fit the patient after extraction, as some will wear the same correction always, while others require changing often.

Dr. WESTCOTT—I had one traumatic case of cataract in a boy where I did a very small iridectomy and got vision of 20/40 with the proper lens. With the same lens the boy could read the smallest type. I ascribe this power to the very small pupil.

DISCUSSION ON CAPSULOTOMY.

Dr. COLEMAN—In doing capsulotomy with the ordinary capsule I should not be tempted to use a forceps, but in a tough capsule I am very decidedly in favor of using the forceps, and in the few instances in which I have had occasion to use it, the result has been most satisfactory. I do not see why some of the text-books should recommend removing the capsule subsequently to removing the lens. This seems to me very dangerous.

Dr. HOTZ—My experience is somewhat unique, but in all my extractions I never came across any capsule that I could not cut with a cystitome. If I should encounter one that the cystitome should fail to cut, I should rather remove the cataract in the capsule *à la Pagenstecher*.

DISCUSSION ON SECONDARY OPERATION.

Dr. HOTZ—I dislike to do secondary operations, and if a patient has anywhere near satisfactory vision I do not perform them for the sake of getting better vision. I can not understand how anybody can advocate them so persistently as if they were the simplest and most harmless operations. No matter what instrument may be used, the mechanic action certainly is not so much cutting as tearing. We have very little chance to cut a capsule, and I have found that the membrane will yield before the knife until it tears. If the membrane is very thin, no serious reaction follows; but if at all thick the reaction is severe. In cases of dense membrane, I am in the habit of using two fine sharp hooks introduced through the cornea, and tearing the capsule in the center. As the traction of one hook resists the other, there is no dragging on the ciliary region. Even in cases of thin membrane, I have seen violent reaction follow secondary operation and have been able to demonstrate the presence of a small thread of vitreous in the hole in the capsule.

Dr. COLEMAN—I most heartily agree with what Dr. Hotz has said, and I can not understand why some operators make so light of a secondary operation. While the knife needle in my hands has been followed by unfortunate results, I have quite frequently operated on tough membranes with the de Wecker's scissors, and always with gratifying success, a good pupil having been secured and with very little reaction.

Dr. PINCKARD—I have often seen the operation referred to by Dr. Hotz, done in Boston, particularly by Dr. Jeffries. Usually but one hook was used, the other point of traction being a Bowman needle. The needle was passed through the cornea and into the center of the capsule, and then a hook introduced from the opposite side and a tear made with the needle as a point of resistance.

Dr. WESTCOTT—I have accomplished the same thing by introducing two needles on opposite sides of the cornea into the center of the capsule and thus tearing the capsule.

DISCUSSION OF REFRACTION OF CATARACT CASES.

Dr. WESTCOTT—We have to be guided in these matters very largely by the means of our patients. A good many, especially those from the country, are very anxious, for more than one reason, to return as soon as possible, and they all want some sort of a glass when they go home. I have been in the habit of measuring the refraction carefully between the end of the second week and the beginning of the fourth week, and have given the patient the spheric lens which gave him the best vision. I have asked some of these patients to come back in three or four months, and I know that in more than one instance I have been able to give a permanent glass at the end of sixty days, that was still the best glass I could find in a year. In other cases, one of which I have in mind now, I found a very decided change at the end of a year. I extracted a cataract up in Minnesota last September. I left the patient two or three weeks after the extraction, and he accepted then a +9 sphere with a +4 cylinder. I gave him a +9 to wear and he was perfectly satisfied, except that he could not read. This year I found the patient had even less vision, 20/100, with the best correction which I could give him, which was a +12 sphere and a +4 cylinder, at which he was very much surprised. In the dark room I found that the posterior capsule was thrown into fine vertical folds. The anterior capsule was out of the way entirely. I advised needling, and performed the operation on the following day. After a week's time, during which there was absolutely no reaction, the patient accepted the same correction, but got 20/30 vision, and was able to read his newspaper. If we could see all our cataract patients once a month for a year, we could decide this ques-

tion, but otherwise I do not see how we can. I ask my patients to stay in town a month, when they come from outside for cataract extraction. Then I ask them to come back in three months, and then again in six months, if the glasses are not perfectly satisfactory for all purposes, and in that way I have given some patients better satisfaction, I am sure, than I could if I set any definite time for giving final correction.

Chicago Medical Society.

Regular Meeting Oct. 26, 1898.

Dr. J. C. HOAG, first vice-president, occupied the chair.

Dr. HAROLD N. MOYER presented a paper to the meeting, entitled

DUMBNESS OR CONGENITAL APHASIA OF A FAMILY TYPE WITHOUT DEAFNESS OR OBVIOUS MENTAL DEFECT.

He described the case of a boy, 9 years of age, who was otherwise bright and intelligent, who understood all that was said to him, but who had spoken only the one word "mamma" until his eighth year. It could not be learned at what time of life he acquired this word. Inquiry into the family history showed that the father was totally aphasic until 6 years of age, and that two brothers and one sister were similarly affected, none of the latter speaking until 4 years of age. A paternal uncle and cousin were affected with lalling all their lives. The two brothers of the patient grew up and occupied positions in life above that of the parents. The father and two grown sons had an excellent command of language, free from all defects of articulation.

He referred to several classic examples of sudden speech in those who had been previously dumb: the son of Crœsus and the Samian athlete.

The extreme rarity of the affection was shown, an examination of 4485 mutes showing this condition in only seven, and many of these were more defective as to general mentality than those which he described. The explanation of Bastian was referred to, in which he claims that language is to a certain extent instinctive, and in these cases there is some barrier to the emission of speech; under the influence of a strong emotion that is swept aside and speech follows. One of the cases coming under his observation did not speak until the fourth year. Then speech suddenly began, at first imperfect, but in three months he spoke as well as the average child of his age.

Dr. CHARLES H. MILLER presented a paper on

THE PROTEOLYTIC VALUE OF MALT.

After briefly reviewing standard authorities and giving the results of experimentation, he draws the following deductions:

1. Properly prepared, light-colored, semiliquid extracts of malt, possessing strong amylolytic power, have also positive proteolytic value, though decidedly less marked than the better known ferments, pepsin and trypsin.

2. The reaction of the media bears an important relation to the results obtained. This influence is believed to be as follows in sequence of greater activity; 2 per cent. lactic acid; 5 per cent. sodium carbonate; 6 per cent. sodium chlorid (neutral), and 5 per cent. hydrochloric acid.

3. Judging from these experiments, and in the proportions employed, the proteolytic power of malt extracts is about 5 per cent. that of pepsin or pancreation.

4. The dry diastase preparations were not found to possess proteolytic power. The best results were obtained by a freshly prepared extract of malt just before use.

Good malt extract is a valuable food, concentrated and immediately assimilable. It is capable of immediately converting enormous quantities of non-diffusible carbohydrate food starches into soluble dextrin or maltose forms, ready for the use of the body. It is in the amounts commonly administered, capable of largely converting the proteids of an ordinary meal into diffusible peptones. It is distinctively a pleasant medicine, and one readily combined with practically all other remedies, often completely obscuring their disagreeable properties. Malt extract is a first class remedy, and the simplest rules of combination render it doubly satisfactory to use. Regarding administration: it should be given just before or with the meal, and can always be advantageously combined with lactic acid to pleasant tartness, other medicines not interfering.

Dr. DANIEL R. BROWER offered the following preamble and resolutions, which were adopted:

WHEREAS, the members of the Chicago Medical Society regard with deep concern the demoralizing and unprofessional conduct of Prof. Emil Behring in lending his aid to the Dye Works (Farbwerke) of Hochst-on-the-Main, Germany, to the securing of a patent on diphtheria antitoxin; and

WHEREAS, the behavior of Professor Behring is derogatory to the professional character, in conflict with the ancient traditions of medicine, and in sorry contrast with the example of Simpson, Pasteur, Lister, Helmhotz and a host of other illustrious physicians; and

WHEREAS, the history of recent biologic science clearly exhibits the important contributions made to the development and establishment of serum therapy by a number of Behring's predecessors and contemporaries, whose credit he seeks to appropriate; and

WHEREAS, antitoxin of the highest grade, possessing a potency and efficacy far greater than that of the Behring product, has for years been supplied in the American market, at reasonable prices, therefore be it

Resolved, by the Chicago Medical Society, that Professor Behring's conduct is unworthy of his scientific reputation; that his claims to priority in the discovery of antitoxin serum are unfounded; and that the granting of his patent, after five successive rejections by the examiner, was unjust, erroneous and contrary to public policy;

Resolved, that it is the duty of every member of the Chicago Medical Society to renounce the use of the Behring serum, and that the American manufacturers who purpose contesting the patent in the courts are entitled to the moral and substantial support of every American practitioner;

Resolved, that the secretary be requested to send copies of these resolutions to the leading medical journals of the United States, thus giving them a wide publicity.

San Francisco Academy of Medicine.

October Meeting.

Dr. CAGLIERI read a carefully prepared paper on a case of

ACTINOMYCOSIS OF THE LUNG,

which was of considerable interest, as it presented some rather novel features and as these cases seem to be somewhat rare. The patient was a woman 30 years of age, married and having one child. The history, as obtained by the Doctor when he first saw the case, some little time after the onset of the disease, was as follows: The woman was of very slender build and extremely nervous; there was no family history of any nervous, tubercular or specific trouble. She lived in a comfortable home, well provided with all the necessities and many of the luxuries of life. The illness had commenced with a sudden consolidation of the middle and lower lobes of the right lung, accompanied with a temperature of 105 degrees; after ten days this seemed to slowly resolve, and the temperature dropped to 101 degrees, with rises in the mornings. No further change had occurred up to the time when the case was first seen by Dr. Caglieri, about a month from the first onset. When thus seen she was very much wasted; respirations were rapid and shallow, the left chest having less motion than the right; the breasts were soft, smooth and flabby; the lower half of the right chest was the site of a very perceptible fremitus. On the right side was found an area of dulness extending as high as the sixth rib in the median line, and as high as the fourth rib on the side. Other portions of the right and the whole of the left lung were hyperresonant. On auscultation a large variety of râles could be detected—puerile, bronchial, and moist—and vocal resonance was reduced. The heart sounds were weak, but otherwise practically normal. The abdomen presented no abnormality. A diagnosis was made of a sacculated right pleural effusion, and it was decided to at once examine with the exploring needle. The needle located, on somewhat deep puncture, thick, creamy pus. On the following day, when it was attempted to aspirate and wash out the right pleural cavity, it was found that no pus could be drawn into the bottle, no matter where the needle was introduced and no matter how deep the puncture. At this time she was suffering from an almost continuous cough, with more or less bloody expectoration and night sweats. The sputum was carefully examined, but no tubercle bacilli could be found. A few days later the exploring needle was again used, directed in various points and rather deep; again a small amount of thick pus was found, and it was decided that there were a number of small sacs of pus at various points, held between the lung and the chest wall. Shortly after the last exploratory operation an area of inflammatory congestion appeared on the right breast, at about the region of the fifth to the seventh ribs. This was edematous, congested and painful on pressure, and it was thought that there might be some periostitis, resulting from infection from the exploring needle. An incision along the rib showed the presence of some periostitis; the lesion was then scraped and packed. The inflammatory process seemed to be but little checked, however, and very soon other foci appeared, ulcera-

tion set in and many small yellow granulations made their appearance at the site of the inflammatory trouble. It was now suspected to be a case of actinomycosis, and slides were made from the pus of the ulcerating areas, and also of the sputum. Nothing was evident in the sputum, but in the pus were found numbers of rod-like bodies, easily identified as the actinomycosis. The patient was then placed on iodin and Fowler's solution, and intravenous injections of corrosive sublimate were about to be tried, when the patient changed her doctor. She was not seen again for some weeks, when she once more sent for Dr. Caglieri, who found her condition much worse; she had been operated upon a number of times for "lupus," but without any benefit. There were ten or twelve sinuses when she was seen again; she was very weak, and the expectoration of bloody sputum was almost continuous. She rapidly sank and died two weeks later. No postmortem could be held. The Doctor then took up the clinical features of the case, and suggested that there were four conditions to be considered:

1. Was the pneumonia the primary condition, on which through exhaustion, the actinomycosis had become engrafted?
2. Was the actinomycosis a primary condition, which had simply been aggravated by the pneumonia?
3. Had the actinomycosis produced a consolidation, which resembled a true pneumonia?

He then cited a case reported by Dr. Hodenpyle in the *Medical Record* during 1890, in which the clinical symptoms were practically identical with those in his own case, and in which a postmortem had been made; in his opinion the postmortem changes in the case he had just reported would have been found to have been the same as in the case reported by Dr. Hodenpyle.

Dr. KENGLER mentioned a case he had recently seen in which there had been very much the same history, except that the symptoms all pointed to an incurable involvement of the liver, but on postmortem examination he had found a very large abscess of the liver, with also a large amount of pus at different points in the pleura. No slides nor cultures had been made, so that it was impossible to say that it was really a case of actinomycosis, but in his opinion this was the diagnosis. Shortly before death lung symptoms made their appearance, and there was quite an area of solidification on the right side of the chest.

Dr. TAIT objected to the Doctor's making the comparison of the postmortem changes in his case and another case, when he could not say that the condition in his own case was thus and so. He also suggests that there might have been enlargement of the glands, or at any rate infection of them, even though they were not very evident, and that infection did often involve the glands in these cases. He also thought the pus drawn at first should have been examined, and the possibility of the real trouble suspected. He mentioned the value of the examination of all such cases by means of the X-rays, as such examination tended to elucidate the diagnosis very materially by showing whether the pus was in the lung, or in a large pleural sac, or in a number of small sacs.

Dr. CAGLEIRI, in closing the discussion, said that he did not believe it all necessary to examine every case of pleural effusion by means of the X-rays, and that he doubted the actual value of such examination, though he had not employed it. As to the postmortem condition being assumed to be the same as the case reported by Dr. Hodenpyle, he had read reports of four other cases presenting the same clinical features, and they had a remarkable correspondence in the matter of the postmortem condition; he, therefore, thought it not improbable that his case was subject to the same or similar changes, and so mentioned what he thought would probably have been found if such examination had been made. He did not agree with Dr. Tait in the matter of the enlargement of the glands, for he was quite sure that in the case just reported there was no such enlargement, and he also thought there had been no infection, though of this he could not be sure. This case was peculiar, in that it began acutely and so continued, and that at first there was nothing to point in any way to any condition other than a pneumonia, with subsequent formation of pus in the pleural cavity.

Mr. GILLIHAN, a senior student in the Medical Department of the University of California, presented some beautifully preserved and mounted specimens, and described the formula and method of making the preservative mixture. The formula had been suggested to the chief of the University Clinic Laboratory by Dr. Philip King Brown. It is as follows:

GELATIN-FORMOL FLUID.

Soak the gelatin in distilled water for twenty-four hours; pour off the water and then warm the gelatin over a water bath until fluid; then cook, of the gelatin (fluid), 1 part; distilled water, 1 part; glycerin, 2 parts; this should be cooked until the whole is well mixed, stirring all the time with a glass rod. It should then be strained through a flannel cloth and allowed to cool somewhat, when enough 40 per cent. formalin is added to make a 4 per cent. solution. Into this solution, while at about 37 degrees C., the specimens should be placed. Mr. Gillihan said that he had found some trouble with the formula as given, and more trouble with the gelatin as found in the market; owing to bad gelatin a number of specimens had turned milky white a short time after they were put up. He had experimented with all the varieties of gelatin which the San Francisco market afforded, and had found that Knox's gelatin was the one which gave the most satisfactory results. He said also that it was very difficult to make the proper measurements when the solutions were hot, so he had calculated and experimented until he had arrived at the proper quantities to be taken before assembling. The formula as he now uses it, is as follows: Gelatin (dry) 50 gm.; glycerin, 450 gm.; distilled water, 400 gm.; formalin (40 per cent.) 100 gm. The formalin must be very carefully added at the last, or the whole will coagulate. He had found that the best method of making permanent specimens was to use a Petrie dish of the requisite size, making the seal between the dish and the cover by means of a mixture of paraffin and resin, equal parts, which could be poured into the space between dish and cover while hot. Among the specimens shown was one which had been exposed to sunlight exery day for two months; it was of a brain section, and had not faded at all.

Dr. F. DUDLEY TAIT exhibited a specimen of a cancerous breast which he had removed by Kocher's operation, and spoke of the relative values of Halstead's and Kocher's operations for amputation of the breast in cancer. He was quite of the opinion that Kocher's operation was very much superior to that of Halstead, and for many reasons. It made the operation much more simple, cleanly, and less liable to cause inoculation by means of carrying infection to uninfected tissues. It was also less bloody; he had operated in one case where only five ligatures had to be tied in the course of the operation. This question was discussed by Drs. Sherman and Brunn.

Mississippi Valley Medical Association.

Twenty-fourth Annual Meeting, held at Nashville, Tenn., Oct. 11-16, 1898.

Concluded from page 1114.

THIRD DAY—AFTERNOON SESSION.

Dr. ALEX. C. WIENER of Chicago read a paper on

SURGICAL TREATMENT OF PARALYSIS IN CHILDREN.

A clear distinction should be made in diagnosis as well as treatment between cerebral and spinal paralysis. A common symptom in both diseases is paralysis, and yet there is great difference between the two affections. In spastic paralysis one group of muscles becomes rigid and overpowers its opponents, rendering them overstretched and useless, but still their innervation is by no means disturbed. In spinal paralysis there is a true degeneration of the lower neuron and the dependent muscular groups. This being borne in mind, the treatment is to equalize the balance between the spastic and the overstretched muscular group by lengthening the rigid muscles. This is done either by tenotomy, resection of tendons or loosening the attachments of the muscles from the bone, as is done in a spastic condition of the adductor muscles of the pelvis. The after-treatment consists mainly in not allowing the extremity to leave its over-corrected position too soon, and in strengthening the functionally weakened opponents by massage, baths and electricity. Apparatus in these cases is utterly useless and should be entirely discarded. Any other peripheral cause of reflex irritation, as phimosis, occlusion of the prepuce, or of the clitoris, is to be removed. In anterior poliomyelitis we have to deal with a true paralysis of certain muscular groups. This may be overcome by apparatus which supplants the paralyzed muscles, or by operative procedure. This consists of dividing the belly of an active muscle up to the place of its insertion and sewing the corresponding part of the tendon into the cleft of the tendon which belongs to the paralyzed muscle. The inactive muscle is supplied with the vigor of the innervated muscle, taking care, as Milliken has pointed out, that the sheath of the tendon is preserved. By this artificial change in the arrangement of muscles the function of one muscle is transmitted to another. There is taking place an alteration of the reflex activity in the nerve centers of the muscles; hence the

importance of the function of the extremity is by no means a mere mechanical act.

Dr. Joseph Rilus Eastman of Indianapolis read a paper on

THE DIAGNOSIS OF GONORRHEA IN WOMEN.

The diagnosis of this affection in women is comparatively easy, even without the microscope. With a history of impure coitus, free purulent secretion from the vulva, vagina and urethra; intertrigo burning on micturition and vasical tenesmus, the diagnosis is not far to seek. Upon inspection one usually detects a discharge of tenacious pus, or greenish or yellowish streaks upon the linen may alone may be in evidence. The symptoms of gonorrhea in women were dwelt upon at great length.

The gonococcus grows upon flat epithelium. A comprehensive examination of the discharge is not complete until the secretions of the urethra, Skene's lacunæ, the glands of Bartholin, the vagina and cervix, have been searched through; and in chronic cases several preparations should be made from each of these. To secure unmixed gonorrheal pus from the cervix uteri, care should be taken that the platinum wire does not come in contact with the vagina. It is best first to rinse, and then dry the vagina with cotton to free it from mucus.

It will be concluded after many examinations for gonococci, that the urethra is the seat of predilection of gonorrhea in women, and that the vulvitis and vaginitis are secondary, being caused by the bathing of these parts with the discharge from the urethra and cervix. The diagnosis of acute gonorrhea may be made by contemplation of the clinical phenomena alone. For example, if acute urethritis be present, it is almost certain that the gonococcus is to blame. Observation for a few days will establish the diagnosis beyond conjecture, since the symptoms of non-specific urethritis will disappear rapidly. In chronic gonorrhea too much dependence upon clinical manifestations is hazardous. Condylomata are often present, but appear also often independently of gonorrhea. Débris laden discharge from the vulvo-vaginal glands is usually an expression of old gonorrhea, but other germs, as the staphylococcus aureus and saprophytic forms, may occasion just such discharge. Among the more common indications of chronic gonorrhea are the maculaæ gonorrhoicæ of Sanger; red papules about the openings of the vulvo-vaginal glands; sclerotic inflammation of these glands, and scars and erosions in the vulva. All these conditions may be caused by other germs than gonococci. Here, as in acute gonorrhea, the most reliable indication is the urethritis.

Dr. A. M. Cartledge of Louisville read a paper on

POSTERIOR DISPLACEMENTS OF THE UTERUS,

in which he dealt with the subject from a clinical standpoint. He discussed the causes, symptoms and diagnosis of these displacements. Treatment should be divided into measures which correct the cause and methods of support by suturing and shortening the round ligaments. Sometimes it is necessary to employ both methods in the same individual in order to make the result durable. In the first category are to be included thorough curettage; repair of cervical lacerations, if present; perineorrhaphy and restoration of the pelvic floor; tonics, laxatives, and rest. These methods, if carried out successfully, will ultimately relieve the vast majority of posterior displacements. They are not so dramatic or sudden in their relief as ventrofixation and Alexander's operation, but are more in accord with rational ideas. In order to succeed they require time—six to eight months—for the structures to resume their normal tone. They also usually require to be supplemented for some weeks or months following their performance by anterior and posterior tamponnage, or a well-fitting pessary to hold the uterus in position until the repaired parts regain their strength. It is irrational surgery to use any form of support until existing causes have been as far as possible removed.

As between vetrofixation, and Alexander's operation, preference should be given the latter, if no accompanying disease is suspected. Where such disease exists, the operation of ventrofixation should be practised, as is given opportunity for inspection and correction of the pelvic disease. It is the best operation in all cases of adherent uteri.

Dr. A. H. Cordier of Kansas City, Mo., followed with a paper entitled

SOME PHASES OF INTESTINAL OBSTRUCTION.

The causes of this condition are many and varied. Modern methods of diagnosis in skilled hands have led to the saving of many lives, which, heretofore, would have been lost by delay in resorting to the proper treatment. While the diagnosis of intestinal obstruction can usually be made early, there are some cases in which the pathologic manifestations are so insidious or vague that their detection requires time and much clinical analysis. The symptoms of intestinal obstruction were thoroughly outlined. He said the falsehoods uttered by pain and the truths untold by opium have been very expensive to human life in the management of intestinal obstruction. Surgical treatment for the relief of this condition should be resorted to early. It should be thorough and quick. No protracted delays or chronic surgery should enter into the management of an acute intestinal strangulation, as these cases stand prolonged anesthesia and slow surgery badly.

Dr. F. F. Lawrence of Columbus, Ohio, followed with a contribution entitled "Essentials to to Success in Abdominal Surgery."

Dr. Bayard Holmes of Chicago read a paper entitled "The Surgical Treatment of Exophthalmic Goiter." He said the surgical treatment is based on the theory that in this disease the direct morbid factor is an increase in the normal excretion of the thyroid gland. He gave a synopsis of the physiology and pathology and an outline of the embryology of the thyroid, after which he reported a case upon which he had operated, which was a very powerful argument in favor of surgery in dealing with this affection.

Dr. J. S. Nowlin of Shelbyville, Tenn., contributed an article on "Some Forms of Gangrene and their Treatment." Gangrene means death of a part, and is applied to the soft tissues. The blood is always involved in this disease. If the blood is performing its functions, there can be no local death. The blood-channels being destroyed, gangrene necessarily follows. Gangrene appears sometimes suddenly after injuries to the spinal cord. A normal functional activity in the blood prevents the first step in the process of inflammation. Simple endarteritis may be the cause of gangrene; an inflamed artery is then surcharged with blood, stasis results, coagulation takes place, the lumen is destroyed to a certain extent and gangrene results. Sepsis is doubtless a most frequent cause of gangrene in the extremities. In traumatic gangrene the surgeon should look out for sepsis. If there be a simple endarteritis with tissue formation, amputation should be performed at the first evidence of failing vitality.

FOURTH DAY—MORNING SESSION.

Dr. A. H. Osness of Dayton contributed a paper on "Diphtheria and its Logical Treatment." He said the pathologic process in diphtheria is caused by the serum albumin at the point of infection becoming moderated from incorporation with the specific virus. It is then repudiated by the blood-stream and exudes into the neighboring tissues, where it, plus necrotic cells and fibrin, forms the pseudo membrane, that is, a congenial nidus for the Klebs-Loeffler bacillus. The intoxication of the system depends upon the energy of the lymphatics upon which devolves the removal of the exudate. In the treatment the use of antitoxin serum offers the risk of over-toxicity from additional toxin, or systemic impairment from invalidism of the centers; while monosulphide of calcium has been given in three-quarter grain doses every half hour for a period of thirty-six hours to children with the best of results. Water should be taken internally quite freely to help elimination of the toxin, local swabbing being resorted to as well, with a mixture such as the physician deems necessary.

Dr. William K. Jaques of Chicago followed with an excellent contribution on "The Early Diagnosis of Diphtheria,' which appeared in full in the Journal of October 29, p. 1046.

Dr. H. W. Whittaker of Columbus read a paper on "Pichi." In Chili, South America, pichi is found growing as a shrub in abundance. No doubt the active principle of the drug resides in the balsamic resin, but chemic examinations have so far been unsatisfactory in determining its chemic composition. The annoying symptoms of chronic cystitis with enlarged prostate yield to the action of pichi, as was illustrated by the citation of a case. Cystitis complicating specific urethral infection, involving the prostatic urethra, is a combination which under favorable circumstances does not readily respond to treatment, and yet under the influence of this drug the conditions become more tolerable. This remedy is indicated in all the various forms of diseases of the liver. In gall-stones, pichi has proven a valuable remedy in assisting the secretion of bile and theoretically aiding the discharge of the stones. Uric acid formations rapidly disappear from the urine under the corrective influence of this remedy and the general condition of the patient improves.

Dr. I. Henry Carstens of Detroit reported a case of rupture of the body of the uterus during confinement.

Dr. A. Ravogli of Cincinnati presented "A Few Practical Points in the Treatment of Posterior Urethritis." The author recapitulated the principles of the treatment for this disease as: 1, irrigations with the Janet method in a recent case of gonorrhea will in many cases prevent posterior urethritis; 2, irriga-

tion with the recurrent catheter, with permanganate of potassium, followed by injections of protargol, will cure in a relatively short time a case of subacute posterior urethritis without complications; 3, when chronic posterior urethritis lasts for a long time, and has caused infiltration of the submucous tissues, then the application of a sound with ichthyol salve gives the best results.

Dr. F. E. KELLY of Lamoille, Ill., read a paper on "Varicocele." The author outlined the operation for radical cure and the indications for its performance. He considers Bennett's operation of resection of the veins and shortening of the spermatic cord the ideal radical procedure, which he described in detail.

Dr. R. A. BATE of Louisville read a paper on "The Arthritic Diathesis." The term "diathesis" is applied to an inherited predisposition to altered nutrition. He assumed in diathesis an inability on the part of the cells to produce oxidation. He mentioned the diseases generally conceded to be dependent upon the arthritic diathesis. He has experienced favorable results from antilithemic remedies in glycosuria, nasal and bronchial asthma, lithiasis, albuminuria, obesity, eczema, paresis, rheumatism, angina pectoris, recurrent typhlitis, vertigo, biliousness, dyspepsia, neuralgia and migraine.

Dr. ALBERT E. STERNE of Indianapolis contributed a paper entitled "A Triology of Diseases: Acute Articular Rheumatism, Endocarditis and Chorea." He advanced considerations concerning the nature of these three affections and of the connection of chorea with manifestly infectious disease, namely, acute articular rheumatism. A case was reported in point. While he could report several instances of chorea associated with both arthritis and heart lesions, this is the only case known to him where the sequence of this triology seemed distinctly connected with a suppurating injury, following a fairly incontestable portal to the invasion of the ordinary pus microbes to the system. If it be admitted that valvular disease is mainly rheumatic, or at least infectious in character, then the list of cases of chorea connected with the diathesis becomes much greater, inasmuch as from 25 to 50 per cent. (Osler) of cardiac patients give a history of chorea. Looking at the question impartially, it seems almost imperative to assume an intimate relationship between the three diseases.

The following preamble and resolutions were offered and unanimously adopted:

WHEREAS, The general public, the medical profession and the drug trade of the United States have long suffered extortion at the hands of foreign manufacturers of synthetic remedies; and

WHEREAS, Our lax and indulgent patent laws bestow a triple monopoly upon the process, the composition and the name of chemic products for medicinal use, thus excluding every possibility of a healthy competition; and

WHEREAS, The same evil has been recently disclosed in the domain of biologic medicine by the patent granted Prof. Emil Behring and the Hocchat Farbwerke on anti-diphtheritic serum, a patent which could not be obtained in Germany, France, England, or Canada; therefore be it

Resolved, By the Mississippi Valley Medical Association that the seal of its condemnation be placed upon the unethical and unprofessional conduct of Professor Behring; that it is the duty of every member to renounce the use of the Behring serum; and that the American manufacturers who purpose contesting the patent in the courts are entitled to the moral and substantial support of every American practitioner;

Resolved, That an earnest appeal be made to the members of the commission on the revision of our patent and trademark laws, appointed by President McKinley, and their assistance invoked for the modification of existing laws and the suppression of prevailing abuses;

Resolved, That a copy of these resolutions be sent to every medical journal in the United States and to the members of said commission, as follows: Hon. Arthur P. Greeley, assistant commissioner of patents, Washington, D. C.; Hon. Peter Grosscup, Chicago, and Mr. Francis Forbes, New York City;

Resolved, That the members of this Society be urged to write their Congressional representatives at Washington and bespeak their support of any measures of relief ultimately proposed by the commission.

The following officers were elected for the ensuing year:

President—Dr. Duncan Eve, Nashville.

First Vice-President—Dr. A. J. Ochsner, Chicago.

Second Vice-President—Dr. J. C. Morfit. St. Louis.

Secretary—Dr. Henry E. Tuley, Louisville, re-elected.

Treasurer—Dr. Dudley S. Reynolds, Louisville, re elected.

Chicago was selected as the place for holding the next meeting, the time of which is to be fixed by the committee of arrangements and the executive officers.

Seventieth Congress of German Naturalists and Physicians.

These congresses are always well attended, and prove an instructive intercommunication of ideas in various domains of science. It was held this year at Düsseldorf, with over 2300 registered.

Professor KLEIN delivered the first address, on the necessity of courses in the universities to complete the instruction afforded by the technical and medical colleges, for those who wish to acquire a special knowledge beyond the average required for the ordinary career, mentioning as an instance and a distinct progress, the advanced course in physical processes on the largest scale, at the Göttingen University, illustrated by heating appliances, dynamos, etc., supplied by private initiative, a company formed of prominent engineers and firms, who supplement their gift with their advice.

Professor TILLMAN'S address on "One Hundred Years in Surgery," pointed out the lines for the further development of surgery in the scientific deepening of surgical pathology and the closest co-operation with the other branches of medicine, especially internal.

V. NOORDEN recommended Trousseau's forgotten treatment of asthma bronchiale with atropin, commencing with .5 and increasing progressively to 4 milligrams and then decreasing. No secondary effects have been observed and this treatment wards off a recurrence of the affection for a long while, although it has little effect on an existing attack.

BLUM considers the thyroid gland a deintoxicant. He affirms that the iodin found in the gland is used to neutralize toxins. The toxic substances in the blood which normally are taken up and rendered inoffensive by the thyroid pass into the circulation after removal of the gland, and cause not only clinical but pathologic-anatomic symptoms of irritation in the central nervous system, which correspond in every way to the disturbances caused by intoxications. The toxin is therefore a nerve toxin, which is generated normally in the organism, and normally is arrested by the thyroid and deprived of its toxicity.

DRESER described the effects of heroin, a new morphin derivative, which is tenfold as effective as codein in rendering the breathing slower, while only one-tenth as toxic. He has found it very valuable as a cough medicine; dose 0.01. It also doubles the volume and strength of the inspiration and favors the lungs by relaxing the muscles throughout the body.

W. SCHMIDT described the simple technic of his fermentation test of the functions of the intestines, which sometimes gives the clue to disturbances of the small intestine in the absence of all other symptoms. It is based on the principle of the tests of the X-deficit in the gastric juice by after-digestion, showing which of the unused remains of the food are to be considered as pathologic appearances and which as normal losses.

SCHÜLTZE'S surgical treatment of lupus of the face covers the defect with whole flaps taken from the neck after the patches have been excised. If the mucous membrane of the nose is involved, he first removes the skin and leaves the membrane till a month later. To limit the plastic operation as much as possible he detaches the nostrils from the back of the nose and extends them until entirely healed, when he sutures them in place again. He waits from six to twelve months after extirpation of the lupus patches before he reconstructs a total defect of the nose or lips. In 57 cases he has had eight relapses around the edges.

ENGEL and ALBUS reported successful treatment of lupus with the Roentgen ray.

KRABBEL recommends a metal shield to protect the sound skin.

FRANK, in the discussion of Cesarean section, observed that the danger of hemorrhage depends less upon the manner of incision than upon the location of the placenta, although the danger of infection is greater, the more the uterus is handled.

EVERKE stated that the results of Cesarean section would not be more unfavorable than the results of perforation, if the cases were seen earlier, and attributed his 11 per cent. mortality from sepsis in thirty five cases to the fact that all cases had been repeatedly examined before reaching him. He warned against the danger of operating before actual labor had commenced. In his three cases of sepsis after conservative section, he found the uterine wound gaping. The main point therefore is a perfect suture of the uterus. To accomplish this he now applies inner, decidual threads tied on the side of the uterus, with additional, outer threads, deep and superficial, tied toward the peritoneal cavity. Five of his conservatively treated patients have borne children since.

ESCHERICH discussed the significance of bacteria in the etiology of gastro-intestinal disturbances of infants, stating that wherever there was evident infection and contagion a chain

coccus was invariably found in the feces and vomit, which Heubner confirmed, and after death, in the viscera, especially the lungs. He found that in the disturbances unmistakably caused by the bacillus coli, there was a serum reaction, as in typhus, but only with bacilli cultivated from the same individual. He has found disinfection of the intestines unreliable, but has derived great benefit from dietetic measures that influenced the bacterial vegetation by altering the food stratum. These infective affections require more care than hitherto supposed, to avoid contact infection, and keep them apart from suppurating wounds and septic matters, as in the prophylaxis of puerperal fever.

M. MENDELSOHN delivered an able address on "Nursing the Sick." He ranks it as "a *science* with an exceptionally large number of means at its disposal to accomplish its ends," and, with scientifically applied stimuli, affect the functions of the organism and control blood-pressure, perspiration, respiration, sleep, etc. Further research in regard to therapeutically effective stimuli should be accompanied with scientific study of their application by the nurse.

GOLDBERG related the extremely beneficial results he had attained in urogenital tuberculosis, with 1.0 to 3.0 ichthyol *per diem* in a fluid form. Not only did the general health improve, but all the local phenomena were favorably affected.

SCHEDE added three and KRABBEL one, to the eight cases on record (Graf) of permanent recovery after an operation to relieve severe Jacksonian epilepsy. Success is only probable when all the symptoms are present.

B. BENDIX reported his investigation of 140 women to determine the effect of menstruation on the lacteal secretion. He found that the menses returned in 60 per cent. during the nursing period, usually commencing six to eight weeks postpartum, but they did not affect the milk, or so slightly as to be unimportant in most cases, and hence that, everything else being favorable, there is no need to reject a wet-nurse on this account. Even a slight decrease in the quantity of richness of the milk during the period soon adjusts itself and does not affect the child.

BARDENHEUER proclaimed the necessity of extremely radical procedure in tuberculous hip processes, not hesitating to remove large pieces of the pelvis, which possesses immense regenerating power. He fastens the articulation, as he finds that without this measure the musculature of the femur becomes relaxed in time, and the femur finally slips past the acetabulum.

WOLFF reported nineteen cases of extensive resection of the pelvis for tuberculosis with abscesses in 80 per cent., in one case extending from the iliac crest to the knee. The anamnesis is especially important in the diagnosis as even a trifling injury may induce it. Many persons who are suspected of simulation or neurasthenia are in reality affected with tuberculosis of the synchondrosis sacro-iliaca, finally disclosed by the breaking through of an abscess. Suppurating meningitis or rectal paralysis may follow the extensive operation, but less effectual intervention is sure to leave a permanent fistula. He endorses Bardenheuer's method, which he has followed in twelve cases with five deaths. The first incision is carried along the iliac crest to the spina ant. sup., followed by a perpendicular incision to the sacrum, close to the synchondrosis. The lower transverse incision is then made as far as the tuber ischii. The whole of the musculature is then raised with the periosteum, followed by an incision along the labium int. cristæ iliei; subperiosteal detaching of the psoas from above downward, and sawing with the Gigli saw from the foramen to the spina ant. inf. The ileum can then be worked loose. He showed some radiographs illustrating the remarkable regeneration of the pelvis afterward.

KRABBEL described the twelve cases in which he has extirpated the spleen, with seven recoveries. If there is prolapsus, it is apt to be dangerous.

LEICHTENSTERN called attention to the cystitis and tumors in the bladder which affect persons handling toluidin and naphthylamin in anilin works.

NAUNYN, in his address on "Cholelithiasis," advocated surgical intervention in acute and chronic cystitis, cholangioitis acutissima, but with incarcerated stones, chronic colangioitis, and pericholangioitis with adhesions, fistula or carcinoma, the intervention should be preceded with a thorough Carlsbad course. He recommends a course at home, drinking, morning and afternoon, three or four glasses of Carlsbad water—the artificial preferred, never the dissolved salts—and lying down for three hours twice a day, with large, thick, linseed cataplasms over the region, avoiding beer and wine, fat and raw food. In seeking carcinoma metastases he warned never to forget to palpate Douglas's pouch. Löbker's statistics showed two deaths out of 172 cases operated in the last eight years (157 women and 15 men), of whom 10 per cent. had carcinoma.

Other communications on "Formaldehyde Disinfection," "Malt Soup for Sick Infants," "Tetanus," etc., have already been summarized in the JOURNAL.

SCHLOSSMANN exhibited his disinfecting apparatus, which filled the hall with mist in a few minutes.

Ninth Italian Congress of Internal Medicine.

GUIDO BACCELLI turned from the duties of Minister of State to preside over the meeting of this congress at Turin in October. He mentioned in his opening address, as an instance of the marvels accomplished by the endovenous injection of heroic medicines, that Robert Koch, who is now in Italy making a comparative study of "Malaria," after his experiences in South Africa, was recently examining a couple of cases of extremely severe pernicious "malaria," one in the pre-agonic stage, and requested that the cadaver be sent to him the next day, but a single endovenous injection of quinin placed the patient on his feet again to the amazement of all. The subjects for the day were

VENESECTION AND ORGAN THERAPY.

He observed that he had seen most remarkable results follow venesection, especially in capillary bronchitis and acute nephritis. He explains its action in the latter case by the fact that the peripheral pressure of the effusion in inflammation of Bowman's capsule, presses on the small blood vessels and retards the circulation through the delicate apparatus of the glomerulus, from which the entire functional economy of the kidney suffers; the epithelium undergoes fatty degeneration, and the urine diminishes in quantity with symptoms of progressively increasing toxemia. He has saved and even secured complete regeneration of the kidney in hundreds of cases like this by opening a vein in the foot. Rummo concluded his address on organ therapy with the remark that this new branch of therapeutics is firmly based on observation and experience, but requires additional research, which should be conducted patiently and seriously, without sensational notoriety. Bozzolo summed up the question from the practical point of view that the thyroid has a most important position in therapeutics; the thymus and ovary are also important, the testes of some utility and the kidney and liver promising. No other organ has as yet found practical application.

MARAGLIANO'S address on "Venesection" confirmed the benefits and limitations of phlebotomy as proclaimed by Galen: "the depletion and depuration of the organism," adding that Sanquirico has established that within certain limits, venesection never produces functional alterations nor disturbances in the nutrition in animals. He also states that the muscular fibers of the heart are nearly always found slightly altered in dogs, enough to suggest fatty degeneration, which some investigators have noted after venesection, to which they attributed it. He has also observed a certain number of tiny drops of fat in the capillaries of the dog's brain in the normal condition, which also throws light on the fatty degeneration of the capillaries observed in anemia consecutive to venesection. The composition of the blood, he continued, is not constant, but subject to changes, which, however, never affect any of the functions of the organism. He even considers it possible that the entire number of corpuscles are not all actively engaged at once, and that a part can substitute and perform the function of the whole. He reported a number of tests and experiments demonstrating that impoverishing the blood has no injurious effect upon the evolution of infective diseases, but is even directly beneficial when the lungs are not working properly and are unable to eliminate the excess of carbonic acid formed in a blood particularly rich in red corpuscles. Traube expressed this fact when he stated that persons whose blood contains less red corpuscles than the average are less affected by pulmonary disturbances than others, and even a small amount of lung surface is sufficient to eliminate their carbonic acid. This fact explains the manifest improvement after venesection in pneumonia, which he has observed again and again in his own practice; the dyspnea and cyanosis decrease, while the elimination of carbonic acid increases. On the other hand, in cases of circumscribed pulmonary lesions, the elimination of carbonic acid decreases after venesection, showing that the elimination had been practically normal. Recent research (Robin) has proved that venesection promotes oxidation processes in pneumonia, and everything tends to the assumption that when the corpuscles are inert they are useless. He agrees with Zakharine that venesection is especially beneficial in active congestions with hemorrhage, especially of the respiratory apparatus and brain. The amount necessary to obtain the mechanical effect required in these cases is from 200 to 400 c.c. Zakharine even ascribes a *revulsive* action to phlebotomy,

claiming that the congestion may be drawn to a remote vascular region, and Calabrese added two corroboratory observations of severe, rebellious hemoptysis in tuberculosis, arrested by a few leeches applied to the base of the thorax. Maragliano also dwelt upon the advantages of venesection in eliminating the toxins circulating in the blood, especially in renal or pulmonary insufficiency, or when there is some obstacle to the passage of bile into the intestines, and also in the auto-intoxications resulting, usually, from the suppression or functional alteration of the organs designed for the defense of the organism against the poisons it manufactures spontaneously. Bouchard has demonstrated that 500 grams of blood taken from an uremic subject contains 8 grams of extractive matters, i. e., about the same amount as is eliminated normally by the kidneys during the twenty-four hours. The attempt has been made in cerebrospinal meningitis to clear the blood by venesection of all the toxic substances accumulating in it, and favorable results have been obtained with it in diplococcic toxemia, combined with salt solution, especially in regard to the complicating hyposystolic phenomena, although these facts are not yet fully established. In uremic intoxication, an amount varying from 500 to 1000 c.c. is withdrawn. The simultaneous injection of salt solution, preventing variation in the blood pressure, enables a larger amount to be taken than would be otherwise possible. Attempts have also been made to stimulate the formation of blood in rebellious anemia by withdrawing a small amount, 50 to 100 c.c.

CHLOROSIS.

RIVA ROCCI explains chlorosis as the result of an insufficiency of the biochemic function of the red corpuscles, combined with a lack of hemoglobin. The "hypoglobulia" and poikilocytosis are merely secondary causes. Aporti's investigations have established that in vertebrates, the cytogenesis and the hemoglobin genesis are independent of each other. The corpuscle is born colorless and gradually takes on color as it manufactures its own hemoglobin out of the iron in the organism. The corpuscles of chlorotic subjects seem to have less aptitude for the manufacture of hemoglobin. If this primary cause of chlorosis is admitted, it is easy to understand the heredity of chlorosis, its recurrences, appearance at puberty, etc. He reported research which proves that iron increases the amount of hemoglobin, while arsenic increases the number of the red corpuscles. He noted the remarkable improvement attained with Blaud's pills, taken in the large dose of twenty to twenty-five a day.

DE RENZI emphasized the benefits and complete cures secured with rest in bed, and Devoto reported eight chlorotics in whom absolute repose produced prompt and decided improvement, without iron. The appetite returned in ten days and the cure was complete in forty, in a case he described at some length. Zoia mentioned that Bizzozero's demonstration of the formation of the red corpuscles in the marrow in adults, led him to study the ferratin in the marrow, and he was surprised to find it only present in the most insignificant amount, compared to what is found in the liver, which fact confirms Riva-Rocci's theory.

DE DOMINICIS attributes the albuminuria to gastro-intestinal autointoxication a certain, sudden, intense albuminuria observed, with edema, in which the kidneys are no more involved than the other organs, and return to normal with appropriate dietetic measures or lavage of the blood.

"Post-infective Interstitial Nephritis and Renal Sclerosis" were explained by Patella, who injected animals with urine from pneumonia and typhus patients, finding that the pneumococcus and Eberth's bacillus are capable of producing various alterations in the kidneys, especially interstitial nephritis, from which a sclerous process develops.

BENVENUTI announced that "primary splenomegalia" is the result of an intoxication and not of an infection. It is difficult to differentiate from pure splenic anemia, but is indicated by cirrhotic alterations if they arepresent, although there does not seem to be any connection between the lesions of the spleen and those of the liver in many cases. The splenic lesions are characterized by fibro-adenia.

MARENGHI described regeneration of the peripheral nerve-fibers, from some experiments in which he had cut the pneumogastric on one side and fifteen days later on the other, and six days afterward excised the portion of the nerve first cut with the cicatrix. The microscope revealed the entire absence of nerve-fibers at the cicatrix, from which he concludes that the re-establishment of the function of the severed nerve does not depend upon its regeneration, but is effected by means of collateral nerve routes.

BUSCHINI called attention to the diagnostic value of the slight rhythmic jerks of the head that accompany the pulsation in cases of aneurysm of the aorta, noted by Coop. They disappear about twenty-four hours before the rupture of the aneurysm, and may disappear partially or entirely if clots form in the aneurysm.

In connection with the Congress there was a most interesting exhibition to illustrate the history of medicine, with autograph works and reproductions of the priceless treasures of the Vatican and other museums, and collections throughout the country, among them Leonardo da Vinci's anatomic drawings with his autograph notes in his peculiar style of "mirror writing." One case contained reproductions of thevotive offerings and designs carved on the pillars of the ancient temple of Esculapius at Tevere. There were also autograph and unpublished manuscript by Malpighi, Rolandi, and other famous names. The *Gazetta degli Osp.* of October 2 contains reproductions of some of the curious illustrations of these early works on medicine.

Italian Congress of Hygiene.

Turin not only welcomed the Congress of Internal Medicien in October, but also the Congress of Surgery and the Congress of Hygiene, all three remarkable for the number of leading men, who occupy important political positions, in which respect Italy is exceptionally favored.

Among the subjects treated was the success of Professor Sclavo's serotherapy of anthrax, which has been found effectual not only in animals but in man. The Congress passed resolutions urging the government to provide means to produce this serum on a larger scale.

MATTEI reported the efficacy of fluid extract of lemon in the prophylaxis and cure of "malaria," confirmed by the experience of a number present, but for fear that the lay public might be led to neglect the use of quinin, the lemon treatment was not generally endorsed, and the subject was referred to the next congress for further discussion.

OTTOLENGHI stated that a three per thousand solution of corrosive sublimate will not kill the bacilli in tuberculous sputa, but this is accomplished with a 10 per cent. solution of lysol. It was decided that this matter be agitated until an unfailing disinfectant be definitely accepted for this purpose.

The necessity of greater uniformity in the technique of bacterioiogic analysis of waters, was emphasized, to enable comparison of the work in different laboratories.

Resolutions were passed in favor of a central department of public health, and the Congress adjourned to meet next year at Como, where the centennial of the invention of the Voltaic pile is to be celebrated.

SELECTIONS.

Gheel Insane Colony.—The *Charities Review* for October considers the question of the influence of a colony of dements or feeble-minded upon the neighboring community. To begin with, it should be borne in mind that the Gheel colony for Belgic insane dates back about thirteen centuries, beginning on a small scale and progressing with varying fortunes until the present, when almost every home in the town is a part of the great cottage hospital utilized by the State. For all these centuries the insane have had the run of the streets of Gheel, and the citizens' familiarity with the whims and caprices of their guests eliminates every look and tone that might point to any inequalities of condition, and in time the newcomer learns to act as he sees others act. When a new patient arrives he is taken to the infirmary, a comfortable building in the outskirts of the town. Here the first diagnosis is made, and if there is no fear of violence to himself or others, he is put in the general ward for closer observation. The nurse is summoned to take to his home his new charge, and he is told as much of the patient's history as he should know, in addition to explicit directions as to the diet and care that is demanded. The patient is taken at once into entirely new surroundings; into a home, in fact, where he will be regarded with interest and not suspicion. Occupation is also provided as far as possible and the guest encouraged by pay and praise to assist in the work of the house or farm, and in the withdrawal of his

thoughts from himself he takes an interest in the joys and sorrows, trials and labors of those around him. The rules do not allow any family to take more than two patients, and prescribe in explicit terms the care which they must receive, the way in which the rooms must be furnished, the clothing to be worn, the beds on which they sleep, and the food provided. The physician must visit each patient at least once a month, and the inspectors drop in at irregular intervals. Since the majority of the households of Gheel are supported by their insane boarders it is important that the rules should be obeyed, but this is not the only motive for acting humanely. When we recall that for generation after generation the people have been daily exercising patience and showing sympathy, it is easy to see that it is the very nature of these people to be kind and gentle. One of the questions which frames itself in the minds of all who hear of this unique institution is: "How does this large contingent of feeble-minded affect the native population?" The daily association with the simple from childhood on would surely influence more and more each generation, but it does not appear to be the case, and in fact, the great success which has attended the college at Gheel proves conclusively that the Gheelois are as clever as any of their neighbors. The explanation for this unexpected immunity from mental atrophy is that the entire population is apparently oblivious to the presence in their midst of anything abnormal. If this were not the case, it is easy to see how 2000 insane living in the homes and walking the streets might cast a blighting influence over their environment. The colony releases as cured or benefited a yearly average of perhaps 20 per 1000, although efforts are made to reserve the colony for the least promising cases, keeping the curables at home.

Health Resort in Southern India.—The mountain resorts at Simla and Darjeeling, India, are comparatively familiar names to English and American readers, but Kodaikanal, a sanitarium nearer the south end of the peninsula, is seldom spoken of. It is 7200 feet above the sea, near the summit of the Pulney mountains, and has been especially advantageous to missionaries for nearly half a century. Two American missionaries were the first to ascend the precipitous mountains and find there a relief for the deadly burning heat of the lower plains. Groves, springs and a lake exist and add to the climatic attractions of the place, and a railroad now runs not far from the foot of the peak. Stone houses have been erected around and above the lake, and their accommodations are well nigh exhausted during April and May, the two most trying of the hot months of the year, in Southern India. It is a great boon for the adult members of the foreign missions, and also for their children, to have this outing, which saves in many cases the expensive trip to America, when recuperation becomes imperative. Rev. Jacob Chamberlain, M. D., writing to the *Missionary Review* about the history of this lofty resort, says: "It is singular that nearly all the great sanitaria of India, north and south, are at practically the same elevation above the sea, Simla being 7116, Darjeeling 7168, Ootacamund, 7271, Kodaikanal 7209. Simla is the summer capital of the Viceroy. Darjeeling of Bengal, and Ootacâmund of Madras, and hosts of government officials, with their families, accompany the governors there, and other Europeans swarm those places. Kodaikanal, however, is a smaller and more quiet place. Its climate is less damp than many of the hill stations. Being nearer the equator, in latitude 10 degrees and 15 minutes north, its climate varies but little in different seasons of the year. The thermometer 100 feet above the lake never goes below 40 degrees in the cold months, and it never rises above 70 degrees in hot months. In January and February, frost is seen on the shores of the lake, but never 100 feet above. In April and May, the hottest months, the mercury seldom marks above 75 degrees or below 60 degrees, thus varying less than 15 degrees night and day, week in and week out. Essentially the same of the temperature during the hot months of the year, might be said of nearly all the great sanitaria of India. There is not the real tonic effect of frost upon the system. It does not build one up who is run down as a winter in the temperate zone does; but an occasional change to one of these sanitaria is exceedingly helpful in preventing the utter breakdown that has wrecked many a promising missionary career too near its beginning.

New Mexico as a Health Resort.— In *Public Health* for September, Dr. Curtiss Bailey writes at length and with illustrative diagrams, regarding certain climatic peculiarities of "the dry belt of the West," especially of Las Vegas in New Mexico. The climate of New Mexico, though far from ideal, can only be understood and appreciated by comparison with that of other States and countries. A survey of its climatic conditions, such as its altitude, its southerly latitude, its even average temperature, its low humidity, the small amount of precipitation, its excess of sunshine, the minute amounts of aqueous vapor contained in its atmosphere, its isolation from large populous centers, its great distance from large bodies of water, its immunity from high winds and sandstorms, and its freedom from unsanitary surroundings, should convince the reader that there does not exist a better or more ideal climate for the elimination of disease and the restoration of health. One of the prime factors of climate is wind. While it is true that severe winds scour the high plateaus and mesas of the Rockies, yet in localities like Las Vegas Hot Springs, which is situated beneath and sheltered by foot hills, high winds never occur. At Santa Fé, a town fifty miles distant, where the velocity of the wind is, if anything, in excess of that of Las Vegas Hot Springs, we find the annual velocity 60,891 miles. This compares favorably with certain other American cities. The prevailing winds, which are westerly, cross the snowclad peaks of the Rockies, and those foot-hill districts which, covered with terebinthinate growths, saturate them with balsamic odors and healing powers. No large cities interposing to contaminate them, the air here compares with that of midocean, the purest known. The coolness of the nights, which renders sleep possible and pleasant, is explained by the difference which exists between the sun and shade in high altitudes as compared with sea-level. It is estimated that for every 235 feet rise, a difference of 1 degree F. is found between sun and shade. This accounts for the warmth of the sun early in the day, and also explains the rapid fall of temperature at sunset. There is no doubt that the beneficial effects of sunshine increase with altitude. But favorable as may be these conditions, the vast differences do not exist which are generally accredited New Mexico as compared with lower altitudes. Nature demands the same from her children wherever they be; her laws are equally in force everywhere. The conveniences and luxuries of home life can not be sacrificed by the invalid upon the altar of climate. The intelligence, direction and watchful care are as important in one locality as in another. The bed-ridden at home can not rough it on the plains and mountains of New Mexico and expect favorable results. Many have been the disappointments because of such erroneous impressions. Exposures at home, due to atmospheric changes, are both frequent and dangerous; the same is true in New Mexico, even though it be in a lesser degree. The patient needs medical assistance and attention as much on the table-lands of the Rockies as within his native environment. Whatever is necessary for the recuperation and restoration of health at sea-level is equally essential in New Mexico, for climate, though of primary importance in combating disease in the more serious affections, must call to its aid those methods which, applied under less favorable atmospheric conditions, are of no avail.

PRACTICAL NOTES.

Gastric Fermentations.—The following mixture is prescribed by M. Einhorn for the fermentations connected with gastrectasia from stenosis of the pylorus: Resorcin 4 gm., bismuth subnitrate 20 gm., aq. dest. 200 gm. A tablespoonful in a glass of water half an hour before meals three times a day.—*Semaine Méd.*, September 14.

Intrauterine Injections.—Tipiakoy recommends in salpingo-ovaritis and parametritis, irrigation of the uterus with a tepid five per thousand solution of sublimate, continued for three or four weeks. It is also very beneficial preliminary to an operation on the adnexa, by reducing the tumefaction and inflammation.—*Semaine Méd.*, August 24.

Hemostasis with Gelatin.—All the inconveniences of tampons and the dangers of renewing the hemorrhage when they are renewed, after ablation of tumors of the nose, are avoided by dropping a little 1 per cent. gelatinized water from a syringe on the pedicle of the tumor after the first severest gush has been arrested by compression. The clot forms almost instantaneously. Every time the blood appears, check it afresh with the gelatin, warning the patient not to blow his nose, and to stay in bed twenty-four hours, and instil gelatinized or oxygenated water every two hours.—*Semaine Méd.*, September 14.

Treatment of Varicocele.—The assistant stands at the right of the reclining patient and pushes the testes up against the pubis, holding the scrotum between the fore and second finger of his left hand, while with the right he draws out the double wall of the inferior portion into a flat, square apron. The operator then inserts a Reverdin needle into the scrotum just below the testes, and a ligature is made, passing through the derma and tied moderately tight, so that the drawn up bag thus formed of the under portion of the scrotum, hangs directly beneath the testes, neither in front nor behind. Chloroform is unnecessary.—Professor Nimier: *Revue de Chirurgie*, October 10.

Mitigations of Graves' Disease.—Dr. Roland G. Curtiss of Philadelphia (*Internat. Clinics*, Vol. iv, Series v, p. 78) concludes an article on this affection as follows: Graves' disease is hereditary, therefore the marriage of those having such an inheritance should be discouraged. A person with such an inheritance should reside at an elevation of more than 500 feet; should avoid great excitment or any highly exciting occupation; should shun a residence in a limestone region, and hesitate to select a home in a locality where the disease is common, no matter what the locality may be; and should avoid any cause of anemia, as well as excessive study, prolonged mental or sexual strain or anything likely to induce a neurasthenic condition.

Ergot in Chronic Malaria.—Jacobi (*Med. News*, October 22) reports cases and concludes from his use of ergot that: 1. Certain cases of chronic intermittent fever occur, with large tumefaction of the spleen, which, having resisted the action of quinin, arsenic, etc., are benefited by ergot. 2. The contracting effect of the ergot is noticed within a reasonable time, when the splenic enlargement is not old or firmly established. 3. The attacks will disappear before the diminution in the size of the spleen is very marked. 4. Chills are not noted, as a rule, after the use of ergot, though temperature remains irregular. 5. Plasmodia do not disappear so rapidly as with quinin, where the latter is effective, though many apparently intractable cases get well with ergot.

Aneson, the New Anesthetic.—This is a colorless, aqueous solution of thrichlor-pseudobutyl-alcohol or aceton-chloroform and corresponds to a 2 to 2.5 solution of cocain, but has none of the latter's local irritation and is non-toxic. As much as seventeen grams have been used without after-effects. The anesthetic effect is also immediate, with no interval, as with cocain. In suturing, a small amount of aneson injected at the points where the stitches are to be taken will prevent pain. Even inflammatory phlegmonous processes can be rendered perfectly insensible if sufficient aneson is used to keep them flooded all the time. The anesthesia was not perfect in all cases, but this can be said of all other anesthetics. L. Sternberge of Berlin concludes his report of a dozen tests of aneson in the *Klin.-Therap. Woch.*, of September 25 by recommending it as a useful and safe anesthetic.

Peripheral Neuritis.—The connection between peripheral neuritis and chronic deforming rheumatism is evidenced by thirteen observations on record in which a peripheral neuritis was noted with chronic deforming rheumatism, one observation of spinal menigitis and six observations of alterations in the spinal cord accompanying pronounced peripheral neuritis. Pitres and Carriére comment on these cases (two personal) that the neuritis is not the essential cause of the rheumatism by any means, but probably plays an important part in the production and localization of the trophic alterations of chronic rheumatism and is itself the effect of the antecedent lesions of the tissues or of the humors of whose nature we are still ignorant. The neuritis is evidently a sort of intermediary between the general disease, the rheumatism, and the articular dystrophy.—*Archiv Clin. de Bordeaux*, August.

Purulent Ophthalmia and Ophthalmia Neonatorum.—In these diseases Jenkins (*Med. Record*, October 29) uses the following: Argenti nitratis, gr. v-x; acaciæ, ʒi (or q. s.); aquæ destillatæ, ʒss; petrolati liquidi, ʒss; to be made into an emulsion and shaken well before using. He believes the various potent solutions and crayon applications often do more injury to the eye than the diseases, and that this emulsion is the least injurious and most efficacious in all forms of purulent disease of the eye. In the initial stage the customary treatment for blenorrhea is to be followed, the emulsion resorted to on the establishment of suppuration, when, the patient on his back and the lids everted, the eye being cleansed with a hot 1 to 5000 sublimate or potassium permanganate solution, two or more minims are dropped into the eye. The surgeon should then manipulate the everted lids so that the emulsionpenetrates "to the utmost recesses of the folds of transition of the conjunctiva." The emulsion should at first be used every twelve or twenty-four hours; afterward twenty-four, forty-eight or sixty hours, until the discharge entirely ceases.

Gelatin in Aneurysms.—Lancereaux presented a couple of patients at a recent meeting of the Paris Académie de Médecine, cured by subcutaneous injections of 150 to 250 c.c. of a solution containing 2 gm. of gelatin to 100 gm. physiologic salt solution. One patient had received twelve injections in the gluteal region between January and May, and two new aneurysms, appearing lower down, were definitely arrested with a single injection. Nature heals an aneurysm by the formation of clots in the cavity of the sac, until the lumen becomes as small as the rest of the artery. The aim of therapeutics should therefore be to assist nature in the formation of these clots, and this can be accomplished by rendering the blood more coagulable with gelatin. A sac-shaped aneuryism, with its slower current and uneven walls, is especially amenable to this treatment, but a spindle shaped dilation is not affected by it. He reported five observations and Huchard another. The latter by this method has arrested uncontrollable hemoptysis in a tuberculous patient. Fournier called attention to the extreme frequency of syphilis in the etiology of aneurysm of the aorta, noting that one of the patients presented was a syphilitic, and mentioned a new cause of error in the diagnosis of aneurysm of the aorta of syphilitic origin: the appearance of a large gummatous patch in front of the aorta, which presents every indication and is accompanied by all the symptoms of aneurysm of the aorta, but is in reality nothing of the kind. It yields readily to specific treatment, but it must not be supposed that it is an aneurysm that has been cured.—*Bulletin*, October 11.

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SATURDAY, NOVEMBER 12, 1898.

THE RELATION OF MALARIA TO RENAL DISEASE.

The profession is coming to recognize more and more the interdependence in health and disease which exists between the various organs of the body, and that maladies which exert their primary and dominant influence upon one organ may simultaneously or consequently seriously derange another part far removed from the site of the early lesion. In no organs of the body is this interdependence of function better developed than in those which occupy the abdominal cavity, or lie in adjacent parts, and as a result of this we see secondary renal changes following diseases in the liver, the spleen and the intestinal canal in a considerable number of maladies. It is, however, particularly in those diseases which are called infectious that the kidneys are apt to suffer, for they are the organs by which the toxins or poisonous matters produced by the infecting micro-organism must be chiefly eliminated from the body, and it is for this reason, in all probability, that nephritis so frequently follows scarlet fever and other acute infections. As the years go by it becomes evident that primary renal disease is much less frequent than it was originally considered to be and more commonly it is recognized as a purely secondary affection.

In this connection recent studies which have been made concerning the influence of malarial infection upon the kidney are of very great interest, and it seems to be the universal experience of those who have made a careful study of malarial infection that albuminuria indicating renal difficulty due to malaria is exceedingly common. Thus OSLER states that it occurred in 46.4 per cent. of the cases in his wards, and THAYER has recently shown that casts of the urinary tubules were found in 17.5 per cent. of the cases, indicating that there was a true inflammation of the kidney in these cases of the disease. Furthermore, he has also shown that in 1832 cases of nephritis, 26 were of malarial origin. In confirmation of these statistics KERLEY has also reported the case of a child of 18 months who developed malarial nephritis, and he quotes MONCORVO'S article, in which it is stated that in Rio Janeiro it is not rare to find children suffering from acute nephritis as the result of malarial poisoning.

FRUITNIGHT has also reported similar cases, and it is evident that physicians called upon to treat malarial cases should carefully watch the state of the kidneys by a constant examination of the urine.

These facts are also interesting in connection with the well-known antagonism of many prominent practitioners to the use of quinin in malarial fever, associated with renal changes, and we believe that great caution is necessary concerning the use of this medicament, particularly when the kidneys are involved, first, because quinin in large doses acts as an irritant to the kidney, and second, because it has been found in cases where the kidneys were manifestly impaired that the drug seemed to produce serious renal complications. No less an authority than Koch, on his return from Africa, has asserted that the abuse of quinin in severe malarial infection of the estivo-autumnal type is responsible for many of the complications seen in the malignant forms of malarial fever in that country. It seems to be universally agreed that it is the estivo-autumnal parasite which most frequently produces nephritis. Yet this is the type in which the physician is most tempted to push the drug, as it is the least affected by ordinary doses of quinin. In other words, that form of malarial infection which, by its persistency, would lead to the use of large quantities of quinin also produces a condition of the kidney which makes the use of large doses of this drug of doubtful advantage.

A PSYCHOLOGIC QUESTION OF PRACTICAL IMPORTANCE.

Once in a while, but fortunately not very often, we hear of an accident by land or sea which is utterly unaccounted for on any ordinary rules guiding human conduct, and which seems to demand, or at least justify, the presumption that there are psychologic moments, in which, without any special stress or emergency, there is sometimes a sort of mental vertigo concerning more particularly the judgment of those in whose hands important interests are placed involving property and even human life. A few years ago a great English battleship went down by collision, the latter directly due to orders given by the admiral, who at the time was considered the most promising and

competent of his rank in the British navy. An order was given by him, and repeated in spite of all the remonstrances that the strict discipline of the service would permit, that ignored the plainest rules of common sense, and the carrying of it out cost the lives of some four hundred British sailors and of one of the most formidable of England's fighting ships. It appeared from the inquiry into the disaster that there was no revealable cause for its occurrence other than some inexplicable mental condition on the part of the admiral, by reason of which he had, in spite of his perfect knowledge of the facts, considered the safe turning radius of the ship to be some hundreds of feet less than it really was, a sort of mental process in which one ordinarily a good mathemetician will for the moment conceive that two and two make five or some other equally improbable proposition. Other similar instances can be adduced; a conductor, for example, in spite of explicit train orders, signals his engineer to start out to certain disaster, and very recently a powerful, well-found steamer was lost with serious sacrifice of human life under conditions that are difficult to appreciate without some such presumption as has been mentioned. The ship was miles off her proper course, was headed in the wrong direction; the captain, one of the most trusted and reliable of all those employed by the company owning the ship, was himself in charge of the deck at the time of the accident, and the rocks upon which the vessel struck were well-known dangers, while the conditions of weather, daylight, etc., were not such as to excuse the disaster on other grounds.

It would be natural to suppose that the temporary mental derangement that caused these accidents might be due to alcoholic indulgence on the part of those responsible, but this probability seems to be ruled out by the evidence in some cases, and we must look further for the cause. It can not, moreover, be commonly attributed to mental strain or excitement, for such conditions often are notably absent. We seem to be restricted by exclusion to this view: that able and competent men are subject, under certain special conditions which are, as yet, not clearly understood, to a paralysis of judgment, or rather, perhaps it should be said, to an absolute inability to realize at the moment the real relation of things and the consequences of this non-recognition. This theory has been strongly brought out in the discussion of Admiral TRYON'S case, and it has much to be said in its favor. In minor matters we not infrequently hear people say that they can not explain why they did this or that irrational act; the impulse of the moment, a partial defect of attention or some other excuse generally serving for an explanation at the time. It is only when the consequences are serious, as in case of shipwreck or railroad disaster, that the subject receives much attention or excites general interest. That such conditions should occur in those who have the most important interests in charge makes the subject one of special importance, requiring careful inquiry into the causes and prevention, especially in those whose judgment and attention are taxed. The question arises whether they may not be overtaxed and this be a direct cause of their occasional failure. It is well known that locomotive engineers sometimes break down completely after long-continued nervous strain, and are then sometimes even subject to hallucinations that affect their judgment in critical cases. This, however, may be another matter altogether from the momentary intellectual derangement that makes a shipmaster or railway conductor give an order directly contrary to his own better judgment, with disaster, it may be, as the result. We may assume that there is in some of these cases an intellectual *petit mal*, but it is more reasonable to refer them to something less distinctly pathologic and more in the common order of events. Such errors of attention and judgment must be occurring frequently in common life, but being without specially evil consequences, they are commonly overlooked or forgotten. That they may occur also when every reason should be against it, and in those who by education and training ought to be particularly on their guard against them, only raises the question of their investigation.

A study of all known accidents from this cause, taking into consideration not only the habits, conditions, surroundings, age and all other circumstances of those responsible, would be a possibly valuable contribution, but thorough and extensive investigations into the pathology of attention generally are likely to be the means by which we are to obtain the more practically valuable results. The time may come when those in responsible positions requiring quickness of attention and perception and reliability of judgment, like certain railway employes and other officials, will have to undergo examinations by trained psychologists, to test their fitness in these respects. At present we require tests for the special senses and some of their refinements, such as color perception, but it is not hard to see that the faculties of attention and intellectual quickness are even more important. It is hard to find accidents by land or sea that can be exclusively attributed to color blindness or other special defects, but some temporary higher intellectual aberration is fairly forced on our attention as a cause of such disasters.

BLOOD CRYSTALS.

The hematologist frequently encounters under the microscope crystalloid bodies of varied shapes and sizes. As a rule these are without any practical significance. Their presence, however, may be accounted for in various ways. In the first place they may be of hemoglobin. We have known for a considerable time that though the hemoglobin of human blood

sists laboratory crystallization, that of some of the lower animals, notably the guinea-pig, can be readily crystallized outside the body. In the healthy blood crystallized hemoglobin can be easily demonstrated: a large drop of blood is placed upon a slide, and after coagulation of the margin has taken place the cover is lowered gently, and after from twelve to twenty-four hours the hemoglobin appears as rhombic crystals. In diseased blood, and particularly in leukemia, pernicious anemia, and the septic processes, septicemia and pyemia, it appears much earlier—from a few minutes to a few hours. It may be noted here that human hemoglobin always crystallizes as reduced hemoglobin, a point which may serve to distinguish human blood from that of the lower animals. It would seem that from the readiness with which crystallized hemoglobin appears in conditions of the blood attended with destruction of the red corpuscles, its early presence indicated a retrograde condition on the part of the blood.

Hematoidin crystals are of more frequent occurrence. They are almost always described as a constituent of old blood extravasations, cysts, spleen infarcts, old thrombi, and especially old cerebral softening. In the anemias, pernicious anemia and leukemia, these crystals are often found within the white corpuscles, though this may occur in a specimen of healthy blood as well.

Found more frequently in leukemic blood than in any other diseased condition are the so-called CHARCOT-LEYDEN crystals, though they are by no means peculiar to this disease. They occur as long, colorless, pointed needles, and are identical with the spermin crystals found in the seminal fluid. It would seem from the above that, as far as our knowledge now extends, the presence of these crystals aids us practically nothing in the study of the blood, the only fact of importance being their early presence and in increased numbers in blood which is undergoing a progressive loss in its vitality.

THE ASSOCIATION OF TRAUMATISM AND INFECTION.

During the early part of 1898 we published in the JOURNAL an editorial dealing with this subject, in which it was pointed out that the relationship between traumatism and infection possessed an interest not only to the medical man, but also to the lawyer, in that comparatively mild injuries might result in severe infections in so short a space of time that the patient's death might be directly attributed to the accident. As some of the literature covering this matter was quoted in that editorial it is not necessary at present to quote it a second time, but it is interesting to note that very recently two American investigators, CHEESMAN and MELZER, have published in the *Journal of Experimental Medicine*, a research to determine how far injury of a part rendered it susceptible to infectious processes. We need not quote the tehnique which they employed nor the literature which they studied in the preparation of their research, but it is worthy of note that they found that any interference with the function of an organ caused micro-organisms introduced into the blood to grow with great rapidity and to produce grave injury, and, further, that if one of the organs, such as the spleen for example, were injured and the animal infected with a pathogenic micro-organism, these micro-organisms found lodgment at the site of these lesions and developed with extraordinary rapidity and virulence. They also found that although micro-organisms might be injected into the blood-stream these micro-organisms speedily disappeared from the current and were found congregated, not in the healthy organs, but in that which had been injured. They also cite a remarkable fact, namely, that even after the injection of bacteria into the blood this fluid remains sterile in many instances. On the ground that blood is a liquid tissue it is suggested that it, like other tissues, permits the growth of bacteria only when it has been injured, all of which goes to emphasize the scientific basis for the well-known clinical fact that any condition of injury or debility in one part of the body renders an individual so affected susceptible to almost any infection to which he may be exposed. Thus we see how clinical observation and empiric statements can be and are substantiated by scientific research from year to year. All these facts also emphasize the importance of preparing a patient who is about to be subject to a surical operation, in such a way that every organ in the body is in proper functional activity and strength, so that it may not be prone to infection should the blood become thrown open to disease micro-organisms. How often do we see tubercular areas attacked by the operator in the bones or in the pelvis, without the physician first taking heed that the pulmonary organs are in as good condition as it is possible to put them in, and how frequently the physician meets with cases in which, as a result of operations, secondary infections have ensued. Many of the cases of so-called ether pneumonia, post-operative nephritis, and similar conditions, might perhaps be avoided if particular pains were taken in every case to have every organ in the body prepared to resist disease to the greatest extent before the patient is put to the test of endurance.

THE COMMISSION EVIL.

An evil has lately sprung up which is not specially creditable to those concerned; this is the practice of paying commissions or rebates by specialists to persons bringing them cases. A few years since the medical world was set sneering, by the well-authenticated report that in a certain city the physicians sent out drummers to board incoming trains and by skilful touting to secure business for their respective employ-

ers. Fabulous tales were told of the wealth piled up in this way, and when the light was turned on this practice, the Legislature enacted a law that all persons engaged in this business should wear a badge. This put an end to this scandal. There is little difference between these now obsolete methods and those now practiced in many of our Northern cities, only that professional men are employed as drummers and the slice of the fee is larger.

Another variety of this commercialism has reached the hitherto honest practitioner in the country. The plan is this: Dr. A. brings a patient to Specialist B. or General Surgeon C. A. says, "here is a man abundantly able to pay a good fee, charge him liberally, but I want one-third or one-half." Should the specialist or the general surgeon refuse to accede to this proposition, the patient is taken elsewhere to some less scrupulous brother.

The wrong is to the unsuspecting victim; he trusts his family physician to send him to the specialist of his selection to be sure, but he has a moral right to expect that selection to be made on honest judgment and not with regard to the division of a great fee. Nor is this practice fair to the specialist and surgeon, for they get the credit of charging an exorbitant fee, only a part of which they actually receive.

No. Let each practitioner have his regular and proper fee, and if any division must be made, let the patient know exactly whom he is paying.

THE WAR INVESTIGATING COMMITTEE.

The War Committee of Investigation visited Chicago this week and took testimony of various volunteer medical officers. Colonel SENN, Dr. CUTHBERTSON and others testified. As the testimony was of general interest we will reproduce it in our next issue.

CORRESPONDENCE.

Braces in Spinal Curvature. A Discussion of a Few Points found in an Editorial of Sept. 10, 1898, in the Journal of the American Medical Association.

NEW YORK, Oct. 31, 1898.

To the Editor:—I observe in the JOURNAL of September 10 an editorial on "Curvature of the Spine," which is so far at variance with clinical observations, scientific facts, and known truths, that I believe, in the interest of the profession and the unfortunate individuals afflicted with this deformity, that a short discussion of the editoral and its subject-matter, will not be wholly out of place.

I quote from the editorial: "What greater mistake can there be in medicine than that of fitting a brace to a child suffering from spinal curvature?" . . . "What folly, what total lack of reason it would seem to put a splint on a weak muscle!" . . . "The fault is entirely one of nutrition and development."

These statements are misleading, both to the profession and to the patient. They are arbitrary in their inception, empiric and unscientific as an edict. These statements would lead the reader to believe that all cases were attended with weak or paralyzed muscles as an etiologic factor. Now, I am prepared to state and demonstrate that not all cases of lateral curvature of the spine are attended with weak or paralyzed muscles as an etiologic factor. Cases of lateral curvature of the spine, due to a short leg or bad position in sitting, have their origin primarily in bone changes. Many cases of lateral curvature of the spine begin in bone disease located on one side of the body of the vertebræ, which disease leads to a lateral curve by the destruction of bone, and in other instances by the absorption of the intervertebral cartilages and bone from pressure. In such cases the muscles have nothing whatever to do with pathologic changes which take place in the bone. Such cases are not by any means rare nor in the minority, and I would like to ask whether these wholesale edicts which are promulgated in the editorial are intended to apply to such cases as I have just mentioned, which clinical observations demonstrate, and the entire orthopedic profession, perhaps, with an occasional exception, will verify. In such cases, the weakness of muscle occurring on one side (the convex) of the curve is a secondary result, depending entirely on the primary curve in the bone, and surely, to prevent further destruction by absorption of the vertebræ or intervertebral cartilages, a support to relieve pressure is of paramount importance. In deformities of the extremities caused by paralysis of muscle, and more especially so called spastic paralysis, the only way to prevent bone and ligamentous changes, which would result in hopeless deformities, is by applying appropriate braces and even resorting to extensive tenotomy or myotomy to weaken the strong muscles; thus establishing normal compensation between the muscles. The same rule holds good in lateral curvature of the spine. The spinal column is a flexible lever operated upon by masses of muscle on either side of it. If one set of muscles is two or three times stronger than the antagonizing ones, lateral curvature will result, in spite of gymnastics, massage or electricity, unless the spinal column can be reinforced by a proper brace to hold it in a straight position, to prevent absorption of bone by pressure. I, therefore, can see no "folly nor lack of reason," in applying a suitable support to lateral curvature of the spine, any more than I can see "folly or lack of reason" in applying a brace to a foot paralyzed, to prevent talipes varo equinos.

It may be argued that massage will prevent a clubfoot occurring in spastic paralysis. This I know, with an occasional exception, is impossible, because I have tried it in a large number of cases. It may also be argued that massage and gymnastics, without bracing, will cure all cases of lateral curvature of the spine. This I also know to be an error, because I have seen scores of cases treated with gymnastics and massage by our best orthopedic surgeons in this city, and still these cases have gone on increasing in curve, due to pressure absorption. Proper bracing, together with gymnastics and forcible redressment, should be the rule of treatment in cases requiring it. One may as well attempt to straighten a crooked mast of a ship, which had become warped and bent by the weather, by tightening the shrouds and stays, as to straighten cases of lateral curvature of the spine of the second degree with gymnastics and massage without proper bracing.

Another quotation from the editorial: "There are in medicine and surgery a number of conditions which are hidden from observation and palpation, perhaps they are further obscured by a feeling of uncertainty in the anatomy of the part, and at no time in the course of the disease can we see, feel or measure in millimeters the exact extent of the lesion. The physician will invariably draw down the curtain of obscurity before such a case, lose his clearness of vision and make haphazard thrusts at both diagnosis and treatment." There are many factors in the etiology of lateral curvature of the spine, which the profession know but little about. We are perfectly familiar with pathologic conditions which take place in lateral curvature of the spine. The dissecting-room has told the story. We also

know of something like eight or ten different causes of this curvature, but we do not know the whole of them. It is for this reason that I believe your editorial makes a mistake in its dictum in stating: "What greater mistake can there be in medicine than that of fitting a brace to a child suffering from spinal curvature?" This edict would imply *a perfect knowledge of the etiology of all forms of lateral curvature and that it was always to be found in the muscles alone.* This together with, "The fault is entirely one of nutrition and development," is a mistake.

In many cases changes due to nutrition and development are secondary, the curve not being caused by weak or paralyzed muscles, but by other potent agency, e.g., rachitis, bad position, a short leg and even a diseased vertebra. Surely these conditions require bracing, together with proper treatment, after bone changes in the vertebral columns have taken place. Then a little further on, I find all the causes of lateral curvature summed up in the following sentence: "The predisposing causes are prolonged ill-health, rapid growth and rickets, occurring in girls between 12 and 20 years, while the exciting causes may be a one sided position at school, a faulty position in standing, an obliquity in the pelvis, and it would seem from the fact that it is usually right-sided that a hypertrophy of the muscles on this side acts as a prominent factor." Now, as a matter of fact, the hypertrophy of the muscles is not upon the side of convexity. If the hypertrophied muscles were upon that side they alone would strengthen the spine, and there would be no occasion for gymnastics or other exercises. The paralyzed or weak muscles are always upon the side of convexity and not on the side of concavity.

When the deviation from the median line amounts to more than one-half of the diameter of the vertebræ, it will invariably increase, under any form of treatment short of proper bracing to relieve the pressure at the point of curve, for the reason that the weight of the head and shoulders, upon the flexible spine, while the patient is in an upright position, will constantly exert pressure on that point, and absorption will go on as many hours a day as the patient is in an upright position, no matter if the muscles are developed in strength and size to those of a gymnast.

The illustration appended represents an advanced form of double lateral rotary spinal curvature with its attending bone changes. On the left side the ribs are approximated and even overlapping. The intercostal muscles and ligaments on the left side are put upon the stretch while upon the right they are contracted and have become shortened or destroyed. In the lower curve the transverse processes upon the concave side of the curve have become firmly locked together, as also they have in the upper curve, while upon the convex side of both curves, the transverse processes are as widely separated as the ligaments will permit. In both these curves the vertebræ have become thin and wedged-shaped, the point of the wedge beidg directed toward the concave curve. The muscles in this specimen were found to be degenerated and almost entirely destroyed over the convexity of the curve, while they were shortened and nearly normal in the concavity of the curves. The spine is rotated in the direction of each of the curves, following the law that "rotation takes place in the direction of curve." Gymnastics could only be harmful in a case of this kind; nothing but appropriate bracing could arrest the progress of the deformity, and *nothing could be done to change the pathologic curves in the bone.* It would be necessary to change the shape of the thorax and ribs, and lengthen the intercostal muscles and ligaments to effect a cure, which is impossible.

Muscles do not hold the spine erect. There never was a greater error taught. Muscles only balance the spine. Ligaments and the bony construction of the spinal column, together with intermittent action of the muscles to balance the spine, hold the spine erect. Muscles would tire out if they were put upon the stretch for any length of time, as can be illustrated by an effort to hold the arm in a horizontal position from the body; it will quickly fall to the side, and the muscles become temporarily paralyzed. Then, again, poliomyelitis paralyzes groups of muscles, which is a very frequent cause of lateral curvature. How are we going to restore tone to these muscles short of curing the lesion in the spinal cord, inasmuch as we know that these lesions are usually permanent, paralysis of muscles on one side allows of lateral deviation, and the weight of the head and shoulders producing pressure at the point of curve must necessarily result in absorption of the vertebræ by pressure through the lifetime of the individual? On the concave side of the curve will be found the shortened ligaments and shortened fibrous elements of the muscle. We know that when similar conditions exist in the muscles in the lower extremities, and spastic changes have taken place, nothing but a tenotomy and possibly an extensive myotomy will relieve the deformity. *Gymnastics and massage are of little use, or positively harmful in such cases.* The knife and proper bracing, together with gymnastics to assist in strengthening the opposing muscles, if they were not totally paralyzed on the convex side of the curve, are truly indicated.

That "the ligaments are lax and insecure," is not the fact; the ligaments are positively put upon the stretch on the convex side of the curve and upon the concave side are contracted and shortened, together with the fibrous structure of the muscles. Pathologic specimens in my possession, which I have dissected out, demonstrate these facts. The idea that ligaments are "lax and insecure" originated in the *mind* of the "gymnastic" orthopedic years ago. The dissecting-room explains the error, as it has many of the absurd theories in regard to deformities. To the quotation "Apparatus only defeats the object of the treatment in a great majority of cases by preventing development; an apparatus, no matter how skilfully constructed, can not correct a deformity of this kind," I may add that *no amount of gymnastics or other exercises can, or every has, diminished the curve due to bone changes in lateral curvature of the spine.* When the vertebræ have become deformed from destruction of bone, from absorption due to pressure, and changes have taken place in the ribs and intercostal muscles, that deformity will remain; and the sooner writers upon the subject admit this fact the better it will be for both surgeons and patients. The most that can be accomplished is to arrest the deformity by preventing further changes at the point of curve, by pressure, and aid in the formation of compensatory curves. *That apparatus prevents development is as erroneous as the statement is incorrect.* An apparatus which is only worn when the patient is in an upright position, in connection with proper gymnastics and other exercises, does not prevent development, but, on the contrary, such patients will more rapidly develop muscles that are weak than without it. Clinical observations demonstrate this fact. To illustrate: In club-feet the extensor muscles have become weak on account of the feet having been drawn around to an abnormal position, by the stronger muscles putting the weaker ones upon the stretch.

This stretching of the anterior tibial group of muscles produces degeneration and temporary paralysis by pressure. The sheath and fibrous tissue of the muscle are approximated by stretching, making pressure upon the muscle cell. These same pathologic changes take place in the muscle of the back on the side of the convexity, and, as in club-feet, these muscles will not regain their tone until the tension is taken off them, and this is best done, in club feet, by overcoming the deformity immediately, by operating and bracing, and in the spine, by taking the tension off the muscles by putting the spine in an extended position. When the spine is so extended a proper support will hold it so while the patient is erect. This can only be done by an apparatus of some sort or recumbency in bed.

I am very sorry that it was necessary for me to write this letter, but as I stated in the beginning, it seems to me that the points which the editorial mentioned should be open to discussion in the JOURNAL.

A. M. PHELPS, M.D.

"The Juggiery of Statistics"—A Bungling Prestidigitator.

PHILADELPHIA, Oct. 30, 1898.

To the Editor:—In answer to your correspondent who writes under a part of the above title, permit me to quote a reply which appears in the *Philadelphia Medical Journal* of November 5:

"The Jugglery of Statistics, a Reply to an Absurd Editorial" is the title of an article occupying one and one-fourth columns in the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION of Oct. 29, 1898, and written by Dr. Charles Smart, Deputy Surgeon-General of the U. S. Army. The writer is very scornful and contemptuous of the statistics of medical men in general, and of the *Philadelphia Medical Journal* in particular, viewing all of us from the lofty point of an expert dealing with ignoramuses. He admits the accuracy of the figures given in our editorial, namely, that in the Civil War 66.6 per cent. of deaths were from disease, and in the Spanish War 88.1 per cent. It was this difference that we thought needed explanation, and with all deference to our cynic critic we still think it demands it. This is the way we are disposed of:

"The absurdity of this may be well illustrated by adding to the statistics and ratios given above those derived from the reports of the engagement of Admiral Dewey's fleet on May 1, 1898, at Manila. Dewey's fight lasted only one day. The figures given for the Spanish War covered a period of five months, and those of the Civil War a period of five years and two months; but as the element of time does not enter into the calculations of the ratios criticised this element need not be considered in the engagement at Manila. Here we find that no man was killed, no man died of wounds received, but that one man, an engineer officer, succumbed to heat exhaustion or insolation. Stating these figures as percentages of the total mortality we find: killed 0 per cent., died of wounds 0 per cent., died of disease 100 per cent., as compared with 88.1 per cent. in the Spanish War, and with 66.6 per cent. in the War of the Rebellion. If it is not needful for the Honorable Sirs to give such high consideration to the greater death-rate from disease as compared with the deaths from wounds and deaths on the battlefield in the Spanish War considered as a whole, how serious is the consideration they ought to give to this frightful rate of mortality from disease as compared with that from battle casualties in the Bay of Manila."

Now, is there a schoolboy of ten years of age who could not see the "absurdity of this?" If so, he should be whipped and put to his "arithmetic" again. What right has Dr. Smart to say that "the element of time does not enter into the calculation?" It is precisely this element of time that gives the subject any intelligibility whatsoever. The figures are for the entire periods of the two wars. Were there not a great many days during the Civil War when, no battles occurring, there were no deaths whatever from battle or from wounds, but in which large numbers died from disease? Will not our critic kindly spare us from the necessity of replying to such utter nonsense in future? And will he not also spare us the discourtesy of applying his contemptuous remarks to himself? The death from the heat exhaustion at Manila, by the way, did not occur during, but some time after the battle. The "element of time" being excluded, the percentages of deaths *during the entire Spanish-American War* were as follows: killed, 0 per cent.; died of wounds, 0 per cent.; died of disease, 0 per cent. Q. E. D.

We add as a postscript to the above two thoughts which, as it occurs to us, have not been heretofore brought out: 1. The Civil War was longer, and therefore the number of deaths from disease would necessarily be enormously greater relatively than in a war of short duration. 2. The figures quoted of the deaths from disease in our recent war were made up some time ago, but since then additional deaths have been occurring every day. And the end is not yet reached. The percentage given of deaths from disease in the late war is consequently too low. Such considerations will have no weight with expert statisticians who think that "the element of time does not enter into the calculations."

Respectfully yours,

GEO. M. GOULD, M.D.

Retarded Delivery.

RYAN, IOWA, Oct. 29, 1898.

To the Editor:—The writer was called Thursday evening, October 20, to attend Mrs. C., a primipara, aged 21 years, with small but roomy pelvis and fine muscular development. Vigorous pains were established by 11 P.M., with the position right occipito anterior. Dilatation of the cervix was soon complete, and matters advanced steadily till early morning when, with the head well down on the perineum, and strong pains, all progress ceased. At 7:30 A.M., the mother showing signs of nervous and physical exhaustion, forceps were applied and the head easily delivered. The cord was found tightly wound around the child's neck. Traction on the cord resulted in severing its placental attachment and the child was quickly delivered. On measurement, the cord was found to be nine inches in length, and had evidently furnished one, if not the chief cause for the retarded delivery.

A. H. SCOFIELD, A.M., M.D.

BOOK NOTICES.

A Manual of Otology. By GORHAM BACON, A.B., M.D., Professor of Otology, Cornell University Medical College, New York; Aural Surgeon, New York Eye and Ear Infirmary. With an introductory chapter by Clarence Blake, M.D., Professor of Otology in Harvard University. New York and Philadelphia: Lea Brothers & Co., 1898.

This manual, written for students, furnishes in a very compact form all the information they need about the anatomy, physiology and the diseases of the ear. To impress upon the student the close relation of the upper air passages to aural diseases, the author has added a chapter on adenoid growths, enlarged tonsils and diseases of the nasal passages. The book is well written, small and inexpensive and undoubtedly will become popular with the students. It is profusely illustrated, and contains a colored plate representing a brain abscess. If colored plates at all, we should think in a manual of otology a series of colored pictures representing the drumhead in health and disease would certainly be far more appropriate than the picture of a brain abscess.

Medical Communications of the Massachusetts Medical Society. Volume xxvii, No. 3. Boston: 1898.

The contents of this volume are: 1, "Annual Discourses," by William T. Councilman, M.D. 2. "Some Modern Methods of the Treatment of Phthisis and its Symptoms," by Edward O. Otis, M.D. 3. "Types of Habit Neuro-Psychoses," by Edward W. Taylor, M.D. 4. "The Toxin of Diphtheria and its Antitoxin," by Theobald Smith, M.D. 5. "Recent Progress in the

Bacteriology of Typhoid Fever." by Mark W. Richardson, M.D. 6. "Epidemic Cerebro-Spinal Meningitis," by Arthur H. Wetworth, M.D. 7. "The Educational Treatment of Neurasthenia and Certain Hysteric States," by Morton Prince, M.D. 8. "The Question of the Curability of Cancer of the Breast," by J. Collins Warren, M.D. 9. "Correction by Operation of Some Nasal Deformities and Disfigurements," by George H. Marks, M.D. 10. "Formaldehyde Gas as a Disinfectant," by David D. Brough, M.D. 11. "The Pathology of Acute Infectious Osteomyelitis," by Edward H. Nicholas, M.D. 12. "The Shattuck Lectures, the Influence of the North American Climate on the People," by Sir William H. Hingston, M.D. The volume concludes with the proceedings, Councils of the Society and reports of the various officers. The articles are of a high class, and the volume shows that the advanced standing taken by the authors and the papers constitute marked additions to American medical literature.

The Care of the Baby, a Manual for Mothers and Nurses, Containing Practical Directions for the Management of Infancy and Childhood in Health and in Disease. By J. P. CROZER GRIFFITH, M.D. Second edition. Revised. Pp. 404. Philadelphia: W. B. Saunders, 1898. Price $1.50.

The work is considerably larger than the former edition and is much improved. It has been completely revised and some new illustrations have been added. The work is designed particularly for mothers anxious to inform themselves with regard to the best way of caring for their children in sickness and in health, but is not intended in any way to take the place of the physician; indeed, the physician will find it of great service, as an aid to his efforts and in maintaining his authority.

A Manual of Venereal Diseases. By JAMES R. HAYDEN, M.D., with 54 illustrations. Pp. 304. New York and Philadelphia: Lea Bros. & Co., 1898.

This is the second edition, and, like all Gaul, it is divided into three parts, 1, being devoted to gonorrhea and its complications; 2, to the chancroid, and 3, to syphilis. There are nineteen chapters in the first part, two in the second and twenty-two in the third. It is concisely written and its teachings are sound. We regret to see that the old British system of weights and measures is adhered to in the prescription writing.

Hygiene of the Voice, with Twenty-seven Illustrations. By THOMAS F. RUMBOLD, M.D. Paper. 114 pp. St. Louis, Mo.: Witt Publishing Company, 1898.

The author states in his preface that his own experience teaches him not only that none but medical men should attempt the treatment of voice-users, but only specialists who have limited their practice to diseases of the throat, nose and ear should treat these diseases. This is not a book on treatment, per se, but a book which is intended to inculcate knowledge of the laws of vocal hygiene. Its teachings are wise and conservative.

The Essentials of Materia Medica, Therapeutics, and Prescription Writings. Arranged in the form of questions and answers prepared especially for students of medicine. By HENRY MORRIS, M.D. Pp. 288. Fifth edition, revised and enlarged. Philadelphia: W. B. Saunders, 1898. Price $1.00.

We are pleased to see in this little volume that the metric system of weights and measures, has been introduced and that otherwise it has been revised and brought up to date. It follows closely the last edition of the United States Pharmacopeia and will be found very useful to those for whom it has been prepared.

The Pocket Formulary for the Treatment of Diseases in Children. By LUDWIG FREYBERGER, M.D., Vienna. Flexible covers. Pp. 208. London: Rebman Publishing Company, Limited. 1898.

In this "Formulary" prepared of the drugs used in the treatment of children, the names are arranged alphabetically, and the volume concludes with a therapeutic index. It will be found very useful as a remembrancer, and convenient for immediate reference.

Twenty-fifth Annual Session of the Florida Medical Association. Paper. Pp. 161. Jacksonville: Vance Printing Co. 1898.

This volume comprises the papers and proceedings of the twenty-fifth annual session of this body, held at Jacksonville, Fla., April 26, 1898; also the constitution of this association and the Code of Ethics of the AMERICAN MEDICAL ASSOCIATION, with a list of members of the Florida Association. The volume lacks an index.

The American Pocket Medical Dictionary. Edited by W. A. NEWMAN DORLAND, A.M., M.D., Assistant Obstetrician to the Hospital of the University of Pennsylvania, etc. Containing the pronunciation and definition of over 26,000 of the terms used in medicine and the kindred sciences, along with over sixty extensive tables. Philadelphia: W. B. Saunders. 1898. Price $1.25 net.

This is a handy pocket dictionary which is so full and complete that it puts to shame some of the more pretentious volumes. We commend it.

Tenth Report of the State Board of Health of the State of Maine. 1896-1897. Paper. Pp. 395. Augusta: Kennebec Journal Print, 1898.

This report is for the two years ending Dec. 31, 1897, contains a list of the members of the Board, the Secretary's report and two special papers, one a "Bacteriologic Report upon Formaldehyde," by Prof. F. C. Robinson and B. L. Bryant, and one entitled "Notes on Disinfectants and Disinfection," by the Secretary, A. G. Young, also printed separately and so noticed in the JOURNAL'S book notices.

Pamphlets Received.

Abuse and Dangers of Cocain, The. By W. Scheppegrell, New Orleans. Reprinted from Med. News.

An Additional Case of Double Congenital Microphthalmos: What Should the General Practioner know About the Eye? By Cassius D. Wescott, Chicago. Reprinted from Journal American Medical Association and The Corpuscle.

Annual Report of the Essex County Hospital for the Insane, Newark, N. J., Paper, illustrated. Pp. 72.

Arid Atmosphere of Our Houses in Winter, The. By Henry J. Barnes, Boston. Reprinted from Trans. Am. Pub. Health Assn.

Clinical Study of Interstitial Nephritis, with Methods of Diagnosis. By Everett J. Brown, Decatur, Ill. Reprinted from Med. Record.

Conservative Treatment of Fibroid Tumors by Myomectomy; Conservative Treatment of Pelvic Suppuration of Puerperal Origin; Operation for Restoration of Urethra and Closure of Vesico-Vaginal Fistula Involving Neck of the Bladder; Some of the Disadvantages of Vaginal Drainage for Pelvic Abscess. By Charles P. Noble, Philadelphia. Reprinted from Philadelphia Med. Jour.; Am. Jour. of Obstet., and Am. Gyn. & Obstet. Journal.

Contribution to the Study of the Muscular Dystrophies, a; Orchitis, or Epididymitis, as a Complication or Sequel to Typhoid Fever. By A. A. Eshner, Philadelphia. Reprinted from Am. Jour. of the Med. Sci. and Phila. Med. Jour.

Dangers of Specialism in Medicine, The; Manifestations of Syphilis in the Mouth. By L. Duncan Bulkley, New York City. Reprints from Bul. Am. Acad. of Med. and Dental Cosmos.

Deaths (Ten) Surgical and Causes; Dermal Coverings of Animals and Plants; Serpents and Their Venom: Copperhead, Coral and Rattlesnake. By B. Merrill Ricketts, Cincinnati. Reprinted from Lancet-Clinic.

Diseases of the Alimentary Canal; Treatment. By J. O. DeCourcy, St. Libory, Ill. Reprinted from Cour. of Med.

Effect of Hypertrophy of the Inferior Turbinal on the Nasal Septum. By Lewis S. Somers, Philadelphia. Reprinted from University Med. Mag.

Emotional Prodigality: Melancholia. By W. X. Sudduth, Chicago. Reprints.

Endemic Leprosy in Louisiana. By Isadore Dyer, New Orleans, La. Reprinted from Phila. Med. Jour.

Erosion of the Knee in Children, with Conservation of the Epiphyseal Cartilage; Preliminary Report on Treatment of Dislocation of the Hip by Operative and Manipulative Methods; Questions in the Treatment of Congenital Dislocations of the Hip; Scorbutus in Infants, Some California Cases; Traumatic Dislocations of the Hip in Children, Old and Recent. By H. M. Sherman, San Francisco, Cal. Reprints.

Flies as Spreaders of Sickness in Camps. By M. A. Veeder, Lyons, N. Y. Reprinted from Med. Record.

Individual Communion Cup and its Critics, The. By H. S. Anders, Philadelphia. Reprinted from Penn. Med. Jour.

Intravenous Injection of Normal Saline Solution. By H. T. Hanks, New York City. Reprinted from Am. Gyn. and Obstet. Jour.

Kryofin. By A. E. Minds, St. Louis, Mo. Reprinted from Tri-State Med. Jour.

List of Members of the Medical Association of the District of Columbia. Paper. Washington, D. C.

Modern Treatment of Tuberculosis. By Charles Denison, Denver, Colo. Reprinted from Journal American Medical Association.

My Name's Appendicitis. By Emma B. Standley, Alexis, Ill. Reprinted from Chicago Clinic.

New Treatment for Trachoma. By George F. Keiper, Lafayette, Ind. Reprinted from Ophthalmic Record.

Plea for Posterity. By A. L. Russel, Midway, Pa. Reprinted from Phila. Med. Jour.

Sleeplessness; Its Cause and Treatment. By E. S. Pettyjohn, Alma, Mich. Reprinted from the Phys. and Surg.

Two Cases of Fibroma of the Broad Ligament. By John C. Dacosta, Philadelphia, Pa. Reprinted from Am. Jour. of Obstet.

Trade Pamphlets.

Caroid. Am. Ferment Co., Jersey City, N. J.
Catalogue No. 1. New York Med. Book Co., New York City.
Illustrated Announcement. Harvey Med. College, Chicago.
New Medical Publications. Lea Bros. & Co., Phila. and New York.
Sprague Dry-Heated-Air Apparatus, the Sprague Hot-Air Treatment Co., Chicago.
Hunyadi János Natural Purgative Water Drawn from Saxlehner's Bitter-Water Springs, near Budapest. Cloth. Illustrated. Pp. 113. Budapest: Andreas Saxlehner, 1898.

PUBLIC HEALTH.

An Official Warning.—C. A. Lindsley, M.D., secretary of the Connecticut State Board of Health, reminds his colleagues of the fact that during the last few weeks many soldiers have returned from the numerous military camps, convalescent from typhoid fever or taken down with it after their return. Each of these cases is a source of further infection unless the precautions, which are now so well known and so effective, are carefully and scrupulously observed. The infective agent is a living germ, which is thrown off in great abundance from every typhoid patient, with the excretions from his bowels and kidneys. The immediate destruction of these germs by some disinfectant is the only means of safety. The importation of so many cases into the State, and their wide distribution in various places, will be very likely to cause additional local outbreaks of the disease if vigilant and unremitting attention is not given to the thorough disinfection of the discharges from the patients and whatever of the bedding or clothing may be soiled by them. Circulars on the means of preventing and restricting typhoid fever will be sent freely to any persons on application. The sickroom should have in it only sufficient furniture for use and comfort; no carpets, tablecloths, pictures, draperies or ornamental hangings. The practice of suspending towels and sheets about the sickroom, saturated with carbolic acid and other odorous solutions, cannot be commended. It has little other effect than to frequently cause nausea and headache in the patient and attendants. The mattress should be protected by an impervious rubber sheeting under the usual bed sheets. Two or more will be necessary, so that they can be changed and cleaned as required. The rubber sheet should be thoroughly sponged with carbolic solution, then dried and aired in the sun for several hours. The body- and bed linen should be changed daily. Never shake them. As soon as removed immerse them in a disinfecting solution composed of carbolic acid and water, 1 part to 40, or in a bichlorid of mercury solution, 1 part to 1000. Let them soak four hours or longer, then boil them for half an hour and wash with soap. All food brought into the sick-room and not consumed by the patient should be burned. The nurses should wash their hands whenever they may have become soiled by handling the patient or the clothing, and always before eating or leaving the room. The same rule should be observed by the physicians and other attendants. The importance of extreme cleanliness of the hands of the patient might be added as a means to the prevention of those relapses of fever that are the result of autoinfection. During the prevalence of typhoid, it is prudent to boil all the drinking water and all the milk. When such attention is given to disinfection, rigid isolation is not necessary; and when disinfection is neglected, isolation will be of little importance.—Circular No. 75, 2d edition.

Heavy Mortality by Plague in India.—About two years have passed since the plague became epidemic in the Bombay district, and in that time over 105,500 deaths, or an average per month of 4400 deaths have been admitted to have occurred. In addition to this huge total there have been many thousand deaths from the plague that have been registered as from other febrile causes. In one week in September, this year, in the Bombay Presidency, there were reported 3635 cases and 2749 deaths by plague. In Bombay City, the last week in September, there were 209 deaths, as compared with 127 in the week previous. In Bombay Presidency the number of deaths increased from 3000 in the previous week to 4000, chiefly in Dharwar, Belgaum, Satara and Kolhapur. Calcutta is free, and only one death is reported from Karachi, but the plague is becoming epidemic in Bangalore city, where 124 deaths have occurred. Three cases are reported from Hyderabad State, three from Wallunden in the Punjaub, and sixteen in four districts of Madras. The editor of the London *Lancet* makes the following comment: "The quarantine and severely repressive measures which have been favored hitherto have, as we all know, given rise to a great deal of native discontent and opposition, and as they have not been attended with the successful results which were anticipated or hoped for, the Government of India has had to relax them. The progress of the epidemic in India is conforming to what has been the history of plague elsewhere in the past and in China, the enforcement of land quarantine is attended with serious hardships and is moreover, simply impracticable; the natives would prefer to run the risk of contracting plague to submitting to the severely repressive measures hitherto enforced. As a matter of policy the government is justified in relaxing them under the circumstances in which it is placed. With regard to inoculation, remarkable success is reported from Hubli, and it is stated that no less than 32,000 people have gone through the process. During the existing outbreak in that city only sixty-nine of these have been attacked, while among 8500 uninoculated there have been 417 attacks. If these figures be reliable they speak for themselves. In the district around, however, there have been a large number of deaths, the Dharwar district, in which Hubli is situated, being credited with 1047 cases and 892 deaths. To show how differently inoculation has been received at different places there remains only to compare Calcutta and Bombay, each with about 750,000 inhabitants and about 2000 and 20,000 persons inoculated respectively, against Hubli, with a population of about 40,000 and no less than 32,000 inoculations. In Bombay there have been 27,305 deaths from plague, and in Calcutta about 200.

Trichinous Pork Products in Germany.—During the fifteen years beginning with the decree of 1883, forbidding the importation of American meat into Germany, the latter country has official knowledge of 3003 cases of illness due to trichinæ, with 207 fatalities. Of these there were 1242 cases, or 41.3 per cent. of all, traced to European pork; deaths by this cause 102, or 49.7 per cent. of all. The remainder was due to a variety of sources, but in not one of these 3003 was it proven that the illness was caused by the use of American salted, pickled, or tinned meat, nor by smoked sausage imported under imperial decree of 1891. This statement holds good for all Germany. In confirmation of this fact, a society of importers of meat hereinbefore mentioned has issued posters wherein a reward of $238 is offered to the person who can prove that trichinæ have been transferred to human beings by the consumption of American salted or pickled pork or smoked sausage imported under the imperial decree of 1891, canceling the edict forbidding the importation. The inspection of American meats and sausages is much more rigid than the tests for the German home products. The American product is twice inspected. Before the meat leaves the United States, from each hog, as a whole, the inspector selects six samples or pieces, and from these pieces are taken eighteen cuts, to which is applied the miscroscopic test. When this meat reaches Germany it is again cut into eight or ten pieces; from each of these the inspector selects three samples or pieces, and from each of these samples or pieces three are taken for the microscopic test. This results in the inspection of ninety separate pieces from the American hog, while in the inspection of the German hog only eighteen pieces are tested. It is reported that uninspected American hog products have been introduced into Germany from Belgium, in boxes in which other regularly inspected meats had been received from America, bearing the label of microscopic inspection. Originally, in the microscopic inspections in the United States, the certificates thereof were the same as those given for usual ante and postmortem inspections, with the addition of a red stamp placed on the certificate stating that the goods mentioned were microscopically inspected and found free from trichinæ. On one occasion a carload of bacon arrived at the custom-house of Aix la Cha-

pelle, the certificate of which was without the red stamp. The custom-house officers refused to let the car enter Germany and reported the case to the buyer at Düren. This man wrote to the Antwerp firm that he refused to accept said car, because he was entitled to receive the meat regularly inspected as required by the German laws. The seller at Antwerp replied that, in fact, the meats in question had been regularly inspected microscopically, and it was by mistake that the certificate did not bear the red stamp; that such an error happened sometimes, but that the United States consul in Antwerp would rectify the certificate if the buyer would return it for that purpose. Unfortunately for the Düren merchant, he believed this story, sent the certificate back, and received it again two or three days afterward bearing now the red stamp. He presented this document at the custom-house at Aix la Chapelle, in order to have the carload entered into Germany; but the custom-house officer had reported first to the American consul at Antwerp, and when he learned that the consul had neither changed the certificate nor been authorized to do so, the entrance into Germany was refused and the buyer placed under accusation of having falsified a public document. After several years, the suit terminated in the Supreme Court at Leipzig with a sentence of the Düren merchant to eight days' imprisonment for assisting in the falsification of a public document. The Belgian merchant, of course, could not be prosecuted in Germany. How many times the Belgian port has sent into Germany uninspected meats, it is impossible to say. It is rumored that a regular traffic in empty boxes with proper inspection labels and certificates has existed in Antwerp for some time, with a probability of a like organization in Rotterdam.—"Consular Reports," October.

SOCIETY NEWS.

Tri-State Medical Association.—At the annual meeting of this Association, at Birmingham, Ala., the following officers were elected and Chattanooga, Tenn., chosen as the next place of meeting: President, George A. Baxter, Chattanooga; first vice-president, M. C. McGammon, Nashville; second vice-president, W. D. Travis, Covington, Ga.; third vice-president, George S. Brown, Birmingham; secretary, Frank Trester Smith, Chattanooga; treasurer, Cooper Holtzklaw, Chattanooga.

Iowa State Association of Railway Surgeons.—At the annual meeting held in Clinton, October 13 and 14, the following officers were elected for the current year: President, H. L. Getz, Marshalltown; vice-president, A. L. Wright, Carroll; treasurer, C. B. Powell, Albia; secretary, Ira K. Gardner, New Hampton. Ottumwa was selected as the next place of meeting, October, 1899.

Washington, D. C., Medical Society.—The meeting of the society on the 2d inst. was called to order by the president, Dr. Busey, in memorial of the late Dr. Lincoln. Dr. J. Ford Thompson, chairman of the committee, read the resolutions of respect and condolence which had been prepared, and on motion they were adopted. Dr. I. C. Rosse read a memorial notice of Dr. Lincoln, and eulogistic remarks were made by Drs. Lovejoy, Makall, Loering, Murray, Godding, W. W. Johnston, Mary Parsons, and Morgan.

Detroit Academy of Medicine.—At the regular meeting, October 25, Dr. E. H. Troy read a paper on "Cholera Infantum." He thought the bacteriology of the subject is in such confusion, little can at present be said on the subject, except to affirm that such violent vomiting and purging as always occurs in true cholera infantum can result only from the poisons produced by most virulent germs. Such large, watery movements must result from severe depression to the central nervous system. Hence the study along this line had been made in regard to treatment. Two drugs were advocated for their effect: the one on the central nervous system, and the other for its effect upon the nerve endings in the intestines, viz., chloral hydrate and dilute hydrocyanic acid, these had been given in small doses frequently repeated, and their action carefully noted. In addition, enemata of normal saline solution had been used frequently repeated. Under this treatment better results had been secured than with the older methods. In the discussion it was stated that the lessened number of cases of cholera infantum in Detroit now as compared with twenty-five years ago is as much due to improved sewerage and pavements as to the improved methods of feeding infants. Further, the presence of the island park and the more extensive use of the Detroit River by the poorer classes has been a most potent factor in keeping the mortality down to its present level.

Washington, D. C., Medical and Surgical Society.—The society met on October 31, in celebration of its decennial. Dr. Lewllyn Elliott, the president of the society, opened the exercises with an address, in which he outlined the history of the early formation of the society, tracing its growth during the past ten years and referring to the valuable papers and discussions by the different members. He also referred to the future work and the good they might accomplish in the future of medicine and hygiene. Dr. Landon B. Edwards of Richmond, Va., discussed the benefits of medical examining boards to the community and the medical profession. Dr. W. W. Johnston read a paper on the relation of health to education, based on his observation and study of the early education of children, and Dr. George M. Krober read one entitled "Higher Medical Education, and a Plea for Better Training for the Volunteer Medical Officer." He touched upon the losses of the army in the war with Spain, and praised the Surgeon-General's conduct of his department. He suggested that the medical colleges should pay attention to the line of work which would fit physicians especially for military service, and he called special attention to the excellent equipment and the facilities offered by Washington for the study of medicine, asserting that the many advantages were not fully known to many members of the medical profession. The meeting closed with a banquet at which Dr. Elliott presided. Toasts were responded to by Drs. Stone, Kelly, Kober, Edwards, Alden, Woodward, Bishop, Massen and Morgan.

Southern Illinois Medical Association.—The program of the meeting to be held in Cairo, Ill., Nov. 17 and 18, 1898, includes: "Influence of the Climate of New Mexico in the Treatment of Diseases of the Chest," by Wm. Curtiss Bailey, Las Vegas Hot Springs, N. M.; "Typhoid Fever—A Case with Unusual Manifestations," by A. M. Lee, Carbondale, Ill., discussion led by J. W. Armstrong, Centralia, Ill.; "Report of Two Cases of Hydrophthalmos," by James Moores Ball, St. Louis, discussion led by A. C. Corr, East St. Louis, Ill.; "Typhoid Fever in a Country Practice," by S. P. Schroeder, Hazleton, Ill., discussion led by C. W. Sibley, Fairfield, Ill.; "Sanitation and State Medicine," by A. C. Corr, East St. Louis, Ill., discussion led by J. W. Pettit, Ottawa, Ill.; "Some Reminiscenses of the Southern Illinois Medical Association," by H. Wardner, Laporte, Ind.; "Paretic Dementia," by F. Samuel Dodds, Anna, Ill., discussion led by H. C. Hall, Omaha; "Some Practical Observations in Typhoid Fever," by H. V. Ferrell, Carterville, Ill.; "Case of Compound Dislocation of Knee-Joint Complicated with Compound Fracture of Same Femur Above the Condyles; Leg Saved by Means of Hodgen's Splint," discussion led by Chas. H. Starkell, Belleville, Ill.; "Medical and Surgical Treatment of Renal Calculi, with Report of Seven Cases," by H. C. Mitchell, Carbondale, Ill., discussion led by Dr. Bransford Lewis, St. Louis; "The Importance of Early Operation in Cholelithiasis," by A. H. Meisenbach, St. Louis, discussion led by J. H. Mitchell, Mt. Vernon, Ill.; "Some Neglected Signs in Gynecologic Examination," by Jno. A. Hale, Alto Bass, Ill., discussion led by B. F. Crebbs, Carmi, Ill.; "Ectopic Gestation—Diagnosis and Treatment," by J. L. Wiggins, East St. Louis, Ill., discussion led by H. H. Mudd, St. Louis; "Rectal Diseases—Its Surgical Treatment," by Phil. H. Stewart, Paducah, Ky., discussion led by Leon Strauss, St. Louis; "Peritoneal Abscess Simu-

lating Fibroid Tumor," by H. J. Welsh, Cairo, Ill., discussion led by H. C. Gault, Sparta, Ill.; "Personal Experience in Operating with the Use of Infiltration Anesthesia," by Louis T. Riesmeyer, St. Louis; "Ventro-Fixation for Retroversion," by George Wiley Broome, St. Louis; "Circumcision," by Wm. A. James, Chester, Ill, discussion led by H. C. Fairbrother, East St. Louis, Ill.

NECROLOGY.

J. D. AMES, M.D., Dekoven, Ky., aged 80 years, October 31. ——Peter H. Brooks, M.D., Lima, Ohio, October 28.——J. W. Davis, M.D., Smyrna, Tenn., October 31, aged 77 years.——Roswell Fox, M.D., Wethersfield, Conn., October 26, aged 73 years.——S. E. Givan, M.D., Burney, Ind., October 25.——J. H. Head, M.D., Centralia, Mo., October 29, aged 58 years.——B. H. Paschall, M.D., Arrington, Tenn., November 1, aged 73 years.——David Randall, M.D., Morrisville, Vt., October 25. ——Albion P. Snow, M.D., Winthrop, Me., October 25, aged 69 years.

DEATHS ABROAD.—Professor Bouchacourt of Lyons, France, author of numerous works on obstetrics and gynecology, hydatic and hydatiform degeneration of the kidneys in the fetus, etc., 87 years of age.——Dr. Heydenreich, professor of clinical surgery at Nancy, France; H. Spöndii, formerly professor of obstetrics at Zurich; D. Toscani, professor of legal medicine, Rome.——Dr. Slawiansky, professor of gynecology at St. Petersburg.

MISCELLANY.

Renal Surgery.—Bazet of San Francisco, in a paper on the "Advances in and the Present State of Renal Surgery" (*Phil. Med. Jour.*, October 22), reduces the conditions calling for operation in renal lithiasis, to three: 1, calculus in a healthy kidney; 2, calculus in a diseased kidney; 3, anuria. In the second condition, lesions due to aseptic calculi are characterized by sclerosis or hydronephrosis, and he considers removal of the organ by immediate nephrectomy most logical in the former, while calculus hydronephrosis requires conservative treatment, the kidney, "though thinned and disturbed" being still useful, primary nephrectomy being advised "only when the renal pocket is enormous and the parenchyma is reduced to the thickness of a thin sheet of paper;" otherwise nephrotomy is the operation to be selected, and is preferable in septic lesions with or without distention. Anuria calls for immediate operation.

Pharyngeal Adenoids.—Delavan (*N. Y. Med. Jour.*, October 29) emphasizes thoroughness and humanity as the two essentials to success in operative treatment of this condition. Atrophy of the remainder, after partial removal of an adenoid growth, he considers the exception; rather, the tissue remaining, being unhealthy, is likely to remain so, and may cause life-long annoyance to the patient or injury to surrounding parts. He considers in detail the various methods of removal and the anesthetics of use, advising complete anesthesia to secure ideal conditions for operating, and the blunt forceps for the most thorough removal.

Infective Nature of Eclampsia.—Professor Stroganoff asserts that eclampsia should be included among the infective diseases, giving as his reasons: 1. That it is a general disease, affecting all the parenchymatous organs. 2. That it is an acute affection, commencing explosively or after a certain prodrome. 3. The fever that accompanies it occasionally, especially the postmortem thermic elevation peculiar to an infective disease. 4. One attack confers immunity. 5. The marked genus epidemicus; in 1897 25 per cent. died, while in nineteen cases this year there has been no mortality. 7. It is impossible to explain the increase of eclampsia in populous centers otherwise than by accepting the theory of its infective character, which he is now seeking to prove definitely. His communication in *Wratsch*, Nos. 26 to 35, contains tables showing the links in a number of series.

The Heart.—V. Frey ascribes the rhythmic action of the heart to the muscles, remarking that every bit of the heart, whether it contains a ganglion or not, is capable of automatic activity. The rhythmus is more rapid and less disturbed by extraneous influences, the nearer to the venous portion of the heart, which imposes its rhythm upon the whole. The nerves of the heart are largely centripital, serving for the important reflexes on the organ, respiration and lungs. The centrifugal nerves affect the normal muscular rhythm and peristalsis by altering the number and vigor of the contractions or the transmission of the impulse. Trophic nerve action has not been established nor the co-operation of the ganglion cells in any of the functions of the heart. He estimates the volume of the beat as much less than formerly assumed. The probable quantum in man is 50 to 60 c.c. The work of the heart is extremely dependent upon external conditions, such as pressure of other organs, etc., and modern science possesses means to determine these variables, at least on the isolated heart, which opens new points of view for the study of medicinal substances.—*Cong. of Germ. Nat. and Physicians.*

Murmurs of "Mitral Insufficiency."—Dr. C. F. Hoover in the *Cleveland Medical Journal*, states that in his experience there is a difficulty demonstrating a genuine mitral insufficiency. The regurgitation of the mitral wave is not visible. A curious inconsistency between the causes and occurrence of murmurs is in the fact that we do not always have the murmur when a valvular insufficiency is present. The fact that we can demonstrate a dilatation of the right ventricle and see a positive venous pulse, to my mind, shows the presence of a genuine tricuspid regurgitation. In spite of this we sometimes have these conditions without any murmur at all over the right side of the heart. He believes cardiopulmonary murmurs occur more frequently than many would concede. Often murmurs associated with acute dilatation can not be endocardial in origin. A young man with an acute infection came to the hospital with an increased precordial dulness, with a very distinct thrill over the apex. Percussion shows that the apex is covered by a tongue of lung. If this patient would make a forced expiration the heart would become more exposed, as you can show by palpation and percussion and the thrill and murmur entirely disappear. This patient has an acute dilatation; nevertheless, when there is no lung intervening between the heart and chest-wall, the murmur is not audible. Another point is the time of this murmur. It occurs during the first portion of the anteroposterior excursion of the heart. Dr. Stengel suggests the production of a murmur occurring in relative insufficiency in this way, viz., that the contraction of the papillary muscles produces a genuine mitral insufficiency. If we accept the interpretation of the heart's impulse and the rôle of the papillary muscles in the cardiac activity, as given by Roy and Adami, we should always hear such a murmur at the end of the anteroposterior excursion of the heart. Experience shows that in a very large proportion of the cases of relative insufficiency of the heart the murmur is heard during the first portion of the anteroposterior excursion. I believe there is such a thing as a genuine murmur of relative insufficiency due to the dilatation of the mitral ring. But my experience in the murmurs of relative insufficiency accompanying acute dilatation leads me to believe that they are very frequently pulmonary and not endocardial in origin.

Acute Fatal Pancreatitis.—In temperate climates acute pancreatitis is so seldom met with that it is a curio even among pathologists. We note in the *Lancet* that a case has been reported lately from Hong Kong, one of the papers of that city

containing an account of an inquest held upon the body of the ward master of the Government Civil Hospital, who was found dead in his quarters at the hospital on March 17. Dr. Atkinson, the principal medical officer, in his evidence said that he was summoned in the afternoon to see Mr. Feltham. He found him lying dead on the sofa. At the postmortem examination made on the following day, at which he was present, the cause of death appeared uncertain and the stomach and contents were handed over to the government analyst. The government analyst, deposed to examining the contents of the deceased's stomach: it contained nineteen grains of chloral and one-third grain of morphia. He had last seen deceased alive at midday on the 17th. Dr. Lowson, who made the postmortem examination, deposed to finding acute inflammation of the stomach and pancreas; in the head of the latter there was a large hemorrhagic extravasation. The condition found could not have been caused by either chloral or morphia and in all probability the deceased could not have taken more than thirty grains of chloral, for the absorbing powers of the stomach must have been considerably impaired. The cause of death was syncope in acute gastritis and pancreatitis possibly accelerated by a medicinal dose of chloral. The presiding magistrate gave his finding in accordance with this evidence.

Tuberculosis Pulmonum Traumatica.—Dr. Schrader of Berlin has advanced the opinion that trauma is a cause not only of acute pneumonia, but also of chronic pulmonary disease. He relates the following case: A man, aged 29 years, previously healthy, and with no family history of phthisis, had a severe fall on the right side of the back, and was unconscious for fifteen minutes. On the same evening he felt ill, and was admitted into the hospital two days after the accident. There was then considerable grazing over the right scapula, and pain was complained of in the chest corresponding to the injured part. The breathing was difficult and the temperature 38.8 degrees C. The breathing sounds were absent, vocal vibration increased, and the percussion note impaired in the region underlying the injury. The diagnosis of pneumonia of the right middle and lower lobes was eventually made. About thirteen days after the accident tubercle bacilli were found in the sputum. The patient's condition remained much the same for some days. There was loss of weight. Eventually improvement took place, so that four months after the accident there were no abnormal physical signs beyond a slightly impaired note over the lower part of the right lung. The author refers to some recorded cases of supposed phthisis following injury. He draws attention to the fact that before traumatism the patient was absolutely well. Whether the pneumonia following the injury is to be looked upon as a contusion pneumonia which favored the invasion of the tubercle bacillus, or whether it was a tuberculous bronchopneumonia from the beginning, it is difficult to decide. The author is inclined to accept the latter interpretation. The temperature chart was characteristic of tuberculosis. Finally, the author summarizes the evidence in favor of this view: 1. The development and course of the tuberculous lesion were carefully observed after the accident; 2, the disease corresponded to the site of the injury; 3, there was no clinical evidence of tuberculous disease in the lung immediately after the injury, and no history of previous illness; 4, certain proof of tuberculosis was forthcoming some little time after the accident, the development of which was quite in keeping with that of the ordinary disease.—*British Medical Journal.*

Physiologic Albuminuria.—Herter, before the New York Academy of Medicine, recently (*Phila. Med. Jour.*, October 29) emphasized the fact that when certain delicate tests for albumin are employed, there is serious danger of calling substances albumin that have an entirely different origin and significance. He considers the cold nitric and potassium ferrocyanid tests, though not entirely free from this objection, used with the heat test, the most practicable means of recognizing albumin. Where these tests fail to disclose albumin in the urine, which may be found by other reagents, the patient may be assured that he has no albuminuria, and "albuminarias that can not be recognized by the three tests mentioned are only important as material for erroneous practical conclusions, and have no interest for the practitioner."

Chloroform Anesthesia.—Before the recent meeting of the American Laryngologic Association, Hinkel (*N. Y. Med. Jour.* October 29) reported a case of death immediately following an operation for nasopharyngeal adenoids, chloroform being the anesthetic used. In addition he gives other statistic and pathologic data, showing an abnormally high mortality from such anesthesia "for the removal of lymphoid hypertrophies of the pharynx," and that the "general use of chloroform in the operations for hypertrophied tonsils or nasopharyngeal adenoids is inadmissible."

Massage in Italy.—The *Gazz. degli Osp.* states that massage is in high favor at Giappone, where it is practiced as regularly as the Turks perform their ablutions or the Chinese smoke opium. From the humblest street peddler to the "upper ten," the masseur is summoned when the day's work is over, and in spite of the humidity of the climate, the people of Giappone are exempt from a number of the ills that flesh is heir to, which afflict the dwellers in other towns. The massuers use for superficial manipulations a heavy wooden ball set in another ball, which they grasp and knead the tissues by pressing and rotating. A similar device was described in the JOURNAL, Vol. xxvii, page 270.

Pasteur Institutes.—The Berlin correspondent of the London *Lancet* writes that after having absolutely refused for more than ten years now to put any faith in the Pasteur treatment for rabies, the Germans have at last resolved to try it. An appropriation for an experimental station for the treatment according to Pasteur's method is one of the items in the medical budget for the year. It is to be carried on in connection with the Institute for Infectious Diseases, Professor Koch's department. Though it is said to be only experimental, it would seem as though this was scarcely more than a half-hearted apology for the refusal to have had anything to do with it before. The treatment itself is far beyond its tentative stage, and each year brings more and more encouraging statistics as to its results in Russia, in Italy, in India and in Egypt. The bacteriologic laboratory which was founded by Pasteur at Constantinople by request of the Sultan, has recently reopened its doors after a long period of idleness due to an alleged indifference and carelessness of the State officials and to lack of funds. The French charge d' affairs protested, as did the Imperial Society of medicine, and in this way the attention of the Sultan was drawn to the precarious state of an institution in which he had taken the greatest interest. It is probable that the work of the institution will be greatly developed, for orders have been given that the director of the institute shall want for nothing.

Tetanus.—Stintzing has established, on animals, that the tetanus bacillus generates toxins at its entering point, which may pass into the circulation to some extent, but are mostly carried along the nerves in the neighborhood to the subarachnoidal space or spinal cord, from where they produce their effect, starting from the entering point, spreading later into general tetanus, which occurs more rapidly in man, owing probably to the larger size of the channels of transmission. The points particularly attacked by the toxin seem to be the motor ganglion cells in the anterior cornua. He states that 96 cases of tetanus have been treated to date with Behring's serum, with 35 deaths, but only in 15 cases was the serum given as Behring insists, not later than twenty-six hours after the com-

mencement of the attack. Ten out of these fifteen died. Krokiewicz has injected an emulsion of brain matter in salt solution in one case, with prompt recovery. Vincenzi has recently demonstrated that the bile of tetanized animals possesses antitoxic properties. Escherich reported six new cases of "pseudo tetanus," first described by him at Moscow, characterized by persistent, typic tonic contractions and trismus, which run their course without fever and recover in a few weeks.—*Cong. of Germ. Nat. and Physicians.*

Concussion vs. Intoxication.—Dr. L. D. Mason, in the *Brooklyn Medical Journal*, instances one of those deplorable cases to which attention has been frequently called in the JOURNAL, where the police imprison an injured person under a station-house diagnosis of drunkenness. It was one of those night cases where a bicyclist was struck by a trolley-car and suffered from temporary confusion of thought as a result of the injury. A roundsman and sergeant of police, in order to save time and bother, took upon themselves the responsibility of not calling in medical advice and locked up the innocent and dazed but sober gentleman for the night. In other words, both insult and injustice were added to injury. It was not long ago that one of our leading medical societies appointed a committee to investigate concerning the care of persons who were found unconscious on the street or elsewhere by the police, and also more particularly to reform the action of the hospital authorities concerning the reception or refusal to receive all such persons, under certain conditions. The conclusions that the special committee finally arrived at after considering the whole matter from a scientific and humane standpoint, was that all persons found upon the street in an unconscious or semi-conscious condition, or in such condition as not to be able to care for themselves, should receive prompt medical aid, and if necessary be removed to the nearest hospital, and that the mere supposition of intoxication should not interfere with such care or disposal of the persons rendered unconscious or unable to care for themselves. The committee showed that not unfrequently persons were seriously injured while intoxicated, and that frequently alcoholic liquors were given to persons after injury or sickness; so that the mere fact that the patient was under alcoholic influence should not exclude the possibility of serious injury or disease. The fact was that the injured person was suffering from slight cerebral concussion, resulting in confusion of thought and simulating a mild form of alcoholic intoxication. It was simply a case of mistaken diagnosis on the part of the roundsman doctor and the sergeant who acted as consulting surgeon in the case. The remedy, a night in the lock-up, was rather severe and totally uncalled for. An innocent injured man was punished with false imprisonment in consequence of his injury. The system is a wrong one that put the roundsman in the position to differentiate between cerebral concussion from a trolley-car accident and a mild form of alcoholic intoxication. If this presumptuous policy for the police is to persist, it may be well to suggest that a new question be answered by all applicants for the police force, in accordance with the rules governing the civil service examination: "What are the main points in the differential diagnosis between moderate cerebral concussion, and consequent mental disturbance, and the milder forms of alcoholic intoxication?"

Improved Ear Trumpet.—Kugel of Bucharest has designed a trumpet on the principle of the ear of the horse, like which it is shaped, instead of the usual large flaring rim, to concentrate the sounds. This shape obviates the annoying resonance of the ordinary trumpet, especially as there are a number of holes pierced in the conducting tube. Gruber and Politzer endorsed the new trumpet at a recent meeting of the Austrian Society of Otology. Bing also suggested that as the sounds collected by the receiver are all transmitted to the ear together, instead of being concentrated as when light is focused, the tube that conveys the sounds from the receiver to the ear should be as large as possible, with no space wasted. He therefore suppresses the tube altogether and applies the receiver directly to the entrance of the auditory canal, thus securing a fuller tone, and intends to supplement the instrument with a hollow plate over the mastoid apophysis, to promote osseous conductibility.—*Rev. Hebd. de Laryng.*, October 8.

A Needle-Swallowing Epileptic.—Dr. Charlton Bastian has reported a case communicated to him by a physician at Guisborough, who stated that eighty six needles and one pin had been removed from the patient, a female inmate of the workhouse there. Fourteen others were still to be felt in different parts of the left side of the body. Of these needles, seven are very large, ranging from three and one-fourth to three and three-fourth inches in length. The patient is now 55 years of age, and has been subject to fits from early childhood. She was admitted into the workhouse in 1886. She sometimes had several fits in one day, and rarely passed a day without having one. She recovered quickly from the attacks, and nothing like a post-epileptic automatic state had ever been recognized. She was described as fairly intelligent, but as having fits of bad temper, in which she refused to do anything except knitting, and would not take her food. She had no morbid appetites, and her conduct toward others had been on the whole satisfactory since her admission. Needles were first noticed in her body after she had been in the workhouse about twelve months, during which time she had been accustomed to do much sewing, and often had packets of needles in her possession. The needles had all been extracted by the doctor, the nurse, or the matron, or else by the patient in the presence of one of them. With the exception of one needle expelled from the mouth during a fit of coughing, all had been extracted from some part of the left side of the body, principally from the hypochondriac, lumbar, and iliac regions, or from the buttock and the thigh. No abscesses have occurred in connection with the presence or passage of any of the needles, nor had wounds of vessels or great nerves ever been produced. The patient was not distinctly hemi-anesthetic, though there did seem to be some blunting of sensibility on the left side of the body. She had never been seen passing needles into her body, nor would she make any definite statements on the subject. She had complained very little of pain from the presence of needles in her body, but of some irritation and tenderness when they were approaching the skin and were about to emerge. The needles then caused some slight inflammatory redness, and often some induration of the tissues immediately around them, but no suppuration. The sites from which needles had been extracted were indicated by small white scars. This strange needle-cushion-like patient had apparently had nothing to gain by thus torturing herself in so extraordinary a manner.

Plumbers Examined as a Health Measure.—Under modern systems of house building and disposal of sewage, the dangers to the health of the entire public, arising from defective plumbing, are so great, and at the same time so insidious, that were the State unable to provide for the proper regulation and supervision of the plumber in his work, so as to minimize the danger to the public health from the escape of sewer gas, the supreme court of Wisconsin well says that the State would certainly be unable to protect the public life and health in a most important particular. This power, it adds, may be exercised by the legislature by demanding practical knowledge of his business on the part of the plumber, or it may be done by requiring inspection and supervision of his work by experts, or by both means combined; and, when such regulations are brought before the courts, the question simply is whether or not they are really appropriate and reasonable measures for

the promotion of the public health and safety, and hence are a valid exercise of the police power. For example, the court holds, in the case of State vs. Benzenberg, Sept. 20, 1898, that a law is not unreasonable when it requires that a master or journeyman plumber shall be examined as to his practical knowledge of plumbing, house drainage, and plumbing ventilation, all of which may be acquired in the school of actual experience, while assisting a practical plumber at his work, it not being anticipated that more than this practical knowledge will be required by any examining board. But the court, at the same time, holds that chapter 338 of the Laws of Wisconsin for 1897, entitled "An act relative to the licensing of plumbers and the supervision of the business of plumbing," is void, as discriminating between persons under the same circumstances and conditions, the discrimination being in favor of firms and corporations as against a plumber doing business alone, because it would permit several plumbers to form a partnership or corporation, and all engage in practical plumbing, when only one of their number had obtained, or perhaps was able to obtain, a certificate of competency.

Not Liable for Use of Impure Vaccine.—A municipal corporation, while enforcing a valid ordinance requiring citizens and residents of the city to submit to vaccination, is exercising a governmental power, and, the supreme court of Georgia holds, in the recent case of Wyatt vs. the City of Rome, is therefore not liable to a citizen who may sustain damage on account of impure vaccine matter administered to him by one of the officers or agents of such corporation. To allow any citizen a right of action on account of injuries, real or supposed, that he may have suffered in the interest of the public good, the court says, would be to paralyze the arm of the municipal government, and either render it incapable of acting for the public weal, or would render such action so dangerous that the possible evil consequences to it, resulting from the multiplicity of suits, might be as great as the smallpox itself. Hence, the wisdom of the law in exempting it from liability on such an alleged injury as one resulting from the negligent administration of impure vaccine matter by the officers or agents of a city while enforcing a valid ordinance. The right to prescribe regulations looking to the preservation of the public health, further says the court, is one of those sovereign powers that belong to the State. This power can be delegated by the State to any of its subdivisions of government, such as a municipality or a county, and in the use of it by such subdivisions they are in the exercise of a function purely governmental. When a municipality exercises a governmental power conferred upon it by the State, it is just as if the State itself were in the exercise of the function thus conferred. And it is upon the idea, as old as the English law—"the king can do no wrong"—that the sovereignty of a State protects it against suits by its subjects; no one having a right to hold it liable for any of its officers or agents, unless such right is expressly granted by the State itself. Among the precedents which have been established by courts of last resort that are apparently exceptions to this general rule, the supreme court of Georgia says it has been able to find none that would hold a city liable for any injury that may be sustained as the result of enforcing measures legally enacted for the promotion and preservation of the public health.

Professional Secrecy.—The *Klin.-therap. Woch.* of October 9 describes a case in which a physician was consulted in regard to the health of a daughter whom he found pregnant, but considering himself bound to professional secrecy, he diagnosed the case to the parents as anemia. The parents later ascribed the paternity to him in spite of the girl's declarations to the contrary, as the only possible explanation of his reticence.

Disreputable, but not Larceny.—That Francis M. Steward was convicted of larceny, in the criminal court of Cook County, the supreme court of Illinois holds, in the reversed case of Steward vs. People, was error. According to the statement of the case made by the supreme court and the evidence for the State, the defendant in the criminal court was a doctor, in Chicago; Herman Klepstein was a shipper of a carload of live stock that came to the city, and Timothy Englehard was a person in the habit of bringing patients to the defendant, and receiving some compensation for doing so. Klepstein fell in with Englehard, who after a little time, asked him what was the matter with him, saying that he looked sick. When they got down town, Englehard said that he had to go to the defendant's office to get some medicine for his baby. He persuaded Klepstein to go into the office, and spoke to the defendant about medicine for his baby, and then introduced Klepstein and said that he looked sick, that his eyes looked bad. After the introduction the defendant told Klepstein that he looked sick, but he replied that he was not sick. Then the defendant said that he was a professor, and could tell when people were sick, but could not tell what was the matter until he made an examination. He and Englehard told Klepstein to pull off his overcoat, etc., and one or both assisted him more or less. After the examination which followed, the defendant told Klepstein that he had heart disease, brain trouble and piles; demanded $150 for the treatment said to have already begun; finally took a draft for $50 and a note for the balance; wrote out a prescription and all went to a drug store, where the prescription was filled, Klepstein paying $3.75 for the package of medicine handed to him, and telling a clerk about the arrangement for treatment and that he was afraid the Doctor would not cure him. The note Klepstein got back later, and he admitted that at the time of the examination he told the defendant that he would deposit $200 if he would make him as strong and healthy as he was when he was 17 years old, but that the defendant said that he could not do that. A thorough examination made by another physician, ten days later than the one just mentioned, developed nothing of any consequence in the way of disease, but seemed to show that, on the whole, the man was in good condition and health. Now, while under these circumstances, the defendant was convicted of the larceny of the draft for $50 from Klepstein, the supreme court holds that larceny was not committed, no matter what else it might be, because the crime of larceny always includes the taking and conversion of property without consent of the owner. It says that the methods employed were disreputable, and that Klepstein was over-persuaded and induced to do what he would not otherwise have done; but that there was no larceny, because Klepstein meant to part with the draft absolutely and no force or duress was used upon him.

Commendatory Report.—The report by Surgeon-General Reypen of the Navy Department, on the work of the naval surgeons, is admirable. It shows the very best of organization, and the most complete and thorough efficiency in this department. Everything was provided for, everything was on time, and never in the history of naval warfare has such care or success been in evidence. The mortality in the hospital ship, itself a new feature, showed no greater percentage than in well-conducted hospitals on shore. The sudden call for hospital accommodations for hundreds of Spanish prisoners was instantly and fully met. An outbreak of yellow fever was localized and stamped out. A daughter of the Secretary of the Navy and other trained nurses volunteered for service and did admirable work. Indeed, the report is one to make us proud that there was one such efficient department in the management of the war.—*The Independent.*

Unavailing Heroism.—A most notable Alpine accident, and one that was marked by as magnificent a display of heroism as can well be described, is that by which Professor Nasse of Berlin lost his life. Dr. Nasse, well-known as the assistant to

Professor von Bergmann, and Dr. Borchardt, with two guides, the four roped together, were crossing the Piz Balne over a snow bridge which was considered quite safe by the guides. The bridge gave way and the leading guide and Professor Nasse fell into the crevasse. Professor Nasse had the rope around his chest and hung in midair for half an hour. To relieve the intolerable strain the leading guide cut the rope between himself and Professor Nasse and disappeared into the depths. The other guide and Dr. Borchardt were then able to pull Professor Nasse up, but he was dead. It is cheering to know that the guide who so willingly offered his own life was not killed, but was found unhurt by a rescue party. But as a heroic action it is beyond all praise. Men have risked their lives on the battle-field in many very noble ways, but there they have the excitement and the lust of fighting to keep them up. Here, however, there was nothing of the kind, almost certain and horrible death stared him in the face. Two actions we can recall which are in some way comparable—the one which happened in England when the driver and fireman of the Great Western express stuck to their engine, so as to stop the train, although being boiled alive, and the other the well-known instance of the steersman of the burning steamer on Lake Erie who stood at the wheel while slowly scorching, so that he might steer the ship to land. The news of Professor Nasse's terrible death was received with the utmost sympathy among medical and lay circles in Berlin, where he had a prominent position as head of the out-patient department of the Royal Surgical Clinic. He had made a good many contributions to modern surgery, and came especially into notice during the late Græco-Turkish war as a leader of the German Red Cross Mission to Constantinople. Professor Nasse resided several months in the Turkish metropolis as chief surgeon to the great military hospital of that city. It was a sad coincidence that on the day of his death the *Official Gazette* published the news of his being decorated by the Sultan in recognition of the services he had rendered to the Turkish wounded soldiers.—London *Lancet*.

Death of a Soldier's Nurse.—Miss R. H. Walworth, a volunteer nurse at the camp at Montauk Point, lost her life from typhoid fever contracted at the camp hospital. She and her mother, Mrs. Ellen H. Walworth, were among the heroic volunteer corps of nurses that early went out from New York City to help the returning sick soldiers. The Walworth family name is one that is historic in the annals of that State, and many and sincere have been the tributes paid to the departed patriotic lady.

The London Hospital.—This institution, said to be the largest hospital in the world, except that at Vienna, is constantly engaged upon improvements. A recent change has been to make a charge of three pence for medicines or for surgical dressings in the out-patient department, it being found that those who can afford this nominal charge give it willingly, the sum being remitted in the case of those really unable to pay it. It is thought that the adoption of this plan will benefit the hospital to the extent of some $5,000 a year. A feature of the London Hospital is the provision of separate wards for patients of the Jewish persuasion, for whom food is specially prepared in a Jewish kitchen. Four new operating theaters are being constructed, which are to be models of all that modern science can devise, an Australian gentleman having given $65,000 for this purpose. They will be fitted with an apparatus which will force ice-cooled air into the theaters during the hot weather, and warm filtered air during cold, the pressure being such that under all circumstances there will be a current of air passing from the interior outward. Besides being the largest hospital in the world, after that in Vienna, the London Hospital will, when the present additions and alterations are effected, be the most advanced scientifically.—*American Practitioner and News*, October 1.

Dermatologic Statistics.—In "Impressions and Conclusions Based upon a Study of 5000 Cases of Skin Disease Treated During the Year," Allen (*Med. Record*, October 22) says that "the diseases giving over 1 per cent of the total number and showing the largest number of cases are, in the order of greatest frequency, as follows: Eczema (including all varieties), 985; impetigo contagiosa, 444; pediculosis capillitii, 365; vaccinia, 531; dermatitis 'pediculosa,' 210; urticaria, 170; scabies, 164; dermatitis (traumatica), 142; acne, 141; favus, 139; intertrigo and intertrigal eczema, 127; tinea carcinata, 124; tinea tonsurans, 92; tinea furuncle, 97; syphiloderma, 84; dermatitis calorica (including burns), 75; erysipelas, 72; abscess, 70; verruca, 67; pediculosis corporis, 59; pruritus, 58; psoriasis, 58; erythema multiforme, 54.

Osteopathy and the "Medical Age."—In the *Medical Age* of October 25 the following communication from the publisher, Wm. A. Warren concerning the libel suit of William Smith, osteopathist, appeared:

"Dr. William Smith, osteopathist, has a grievance against the *Medical Age*, and demands $25,000 damages. The ground of his plaint is an editorial, reflecting discredit on Dr. Smith, on the *Journal of Osteopathy*, and on osteopaths in in general. The subject is set forth editorially in the *Medical Age* of Sept. 26, 1898, and a reprint of this editorial will be sent on application. I need hardly assure any one familiar with the past record of the *Age*, that William Smith, M.D., D.O., has a large contract on his hands. His quest for damages is likely to prove futile, and his armor will need patching if it is to withstand the hard legal knocks that will be showered and battered upon it before he touches one dollar of the *Age's* money! Pray do not fancy, however, that William Smith and osteopathy are to be lightly dismissed with the contempt that they merit. There is no use in blinking the fact that the lack of efficient organization among reputable medical men has permitted the whole brood of quacks and charlatans to flourish apace. By the strangest irony of fate, Osteopathy, in some respects the most grotesque of medical aberrations, has well illustrated Lecky's dictum that a small but cohesive and determined minority can exert a political influence wholly disproportioned to its real weight and numbers. In Kentucky, thanks to the resolute leadership of a handful of physicians, ably guided by Dr. Mathews, the osteopaths have been driven from the State. Not so, however, in Missouri or—I blush to say it—in Michigan, Vermont, North Dakota, South Dakota, Illinois, Colorado and North Carolina (*American Medico-Surgical Bulletin*). In these more lax and indulgent communities Osteopathy boasts its numerous followers, its "schools of instruction," its periodicals of propaganda, its political influence in legislation, its shameful immunity from the penalties by which society properly seeks to rid itself of quackish parasites. Emboldened by its success, Osteopathy now enters the courts and offers battle to a medical journal which disputes its respectability. The challenge is accepted. In the interest of science, in defiance of a quackery that continues a deep disgrace to an enlightened age and a stain on the communities which give it shelter, the *Age* proposes to maintain its position and to continue its denunciations of the ignorant pretenders who fatten on the sufferings of the credulous and confiding. Having put my hand to the plow in this uncompromising fight with quackery, I beg leave to assure you that there will be no turning back. I need not point out the bearings this contest must have on the interests of legitimate medicine, and I earnestly hope that the *Age* may count on the moral support and commendation of the entire profession."

Premium for a Life-Saving Invention.—The Belgian Government having decided to offer a premium of $10,000 to the inventor of a paste for matches which will be free from phosphorus, and which will ignite on cloth or on any other surface, a ministerial decree has been issued determining the conditions. The competition will be international in character and will remain open until Jan. 1, 1899.

Telegraphy without Wires.—The compiler of the Consular Reports for September has received from Liège, under date of July 19, a letter from a professor of a San Francisco school of engineering, who has been investigating inventions of wireless telegraphy. The professor refers to the system of Dr. Della Riccia, connected with the Montefiore Institute of Electricity

at Liège. Dr. Riccia has made improvements on apparatus already in use, simplifying it and increasing its power, and claims that he can confine the oscillations of the transmitter to any special point, to the exclusion of all others. In case of communication between war vessels or forts, the message could be transmitted to one alone; in case of fog at sea, the oscillations would not be limited. Dr. Riccia, it is said, can make the presence of a vessel known to another at a distance of thirty miles, and telegraph real messages seven miles.

Explosion of Liquefied Air.—At the Polytechnic Institute of Brooklyn recently a violent explosion resulted from an experiment made by Prof. Irving Fay, with the newly discovered liquid air. It occurred after the class in chemistry had been dismissed, so Professor Fay alone was injured, and it was for a time thought he might lose his eyesight, but this danger has happily been escaped. The agents that were in use, at the time of the accident, were red phosphorus and a waning supply of liquid air, that is believed to have become nearly pure oxygen by the loss of its nitrogen. The exact reaction that took place is not fully understood, but it is probable that the volume of liquid air in the possession of the Professor had been standing exposed to the atmosphere for too long a time to have been a safe exponent of the properties of the new agent. The force of the explosion, like that of dynamite, seems to have been exerted in a downward direction.

No Copper in Green Oysters.—Green oysters have become a subject of fresh discussion. The United States Fish Commission has given renewed attention to the prevalence of green oysters in the Chesapeake region and elsewhere. It is the general opinion among oyster consumers that green oysters are made so by copper, with which they have been contaminated, and that they are therefore unwholesome. But it has been repeatedly demonstrated and announced by the commission that the green oysters owe their color to vegetable matter, which serves as food, and that no impairment of the food value of the oyster results from this condition. The circulation by the press of a report that copper in considerable quantities had been discovered in English oysters induced the commission to make a re-examination of the subject, and this has confirmed previous tests. There is no copper in the green oysters of the United States.—*Sportsman's Magazine*, October.

Gleanings.—Expulsion of a mole containing a four months' fetus—*Brazil Méd.*, September 1.——Death from anti-diphtheria serum administered for long-continued bronchial asthma in a child of 10 years, with slightly arythmic action.—*Semaine Méd.* September 28——Phocas relates two cases of post-operative paralysis after abdominal hysterectomy.—*Journ. de Méd. de Paris*, October 9.——Intraperitoneal injections of oxygen found effective in ascites complicating either tuberculous peritonitis or cirrhosis.—*Klin. Therap. Woch.*, October 16.——E. Fischer keeps a cloth constantly moistened with alcohol over erisypelatous patches and claims that they heal rapidly under it.—*St. Pet. Med. Woch.*, No. 38.——Menelik, King of Abyssinia, has become very much interested in the first hospital established in his capital (erected by the Russian mission), insists upon being summoned to every important operation, and is delighted when allowed to serve as an assistant——Cyanosis noted as a reliable symptom in the early diagnosis of acute general miliary tuberculosis.——In experiments on eighteen rabbits and guinea-pigs inoculated with various severe infections, it was found that the germ never passed into the milk as long as the teats were intact.—*Gazz. d. Osp.*, October 9.

Societies.

The following recent meeting s are noted:

Alabama.—Tri-state Medical Association, Birmingham, October 27.

Connecticut.—New Haven County Medical Society, New Haven, October 27.

Illinois.—Chicago Medical Society, November 2.

Indiana.—Henry County Medical Society, New Castle, October 21; Vanderburgh Medical Society, Evansville, October 18.

Iowa.—Polk County Medical Society, Des Moines, November 1.

Kentucky.—Southern Kentucky Medical Association, Russellville, November 2 and 3; Southwestern Kentucky Medical Association, Mayfield, October 25.

Maryland.—Frederick County Medical Society, Frederick, organized October 30.

Michigan.—Grand Rapids Medical and Surgical Society, October 24; Manistee County Medical Society, Manistee October 26; Wayne County Medical Society, Detroit, October 20.

Minnesota.—Minnesota Academy of Medicine, Minneapolis, November 2.

Missouri.—Central District Medical Society of Missouri, Sedalia, November 3; Medical Society of City Hospital Alumni, St. Louis, November 3; St. Joseph Medical Society, October 25; St. Louis Medical Society of Missouri, November 5.

New York.—Binghamton Academy of Medicine, October 25; Medical Society of the County of Queens, Jamaica, L. I., October 25; State Medical Association, New York City, October 18, 19 and 20; Suffolk County Medical Society, Patchogue, October 28; Syracuse Academy of Medicine, October 25; Union Medical Society, Hoosick Falls, October 26.

Ohio.—Mansfield Academy of Medicine, October 25; Perry County Medical Society, New Livingston, October 20; Tuscarawas County Medical Society, Canal Dover, October 25.

Pennsylvania.—Bucks County Medical Society, Doylestown, November 2; Pathological Society of Philadelphia, October 27.

Rhode Island.—Medico-Legal Society, Providence, October 27.

Annual Report of Illinois State Board of Health.—This 19-20th annual report contains a valuable summary of the laws and regulations governing the practice of medicine in the States and Territories of the Union including Hawaii. The following is a synopsis:

ALABAMA.—Certificate of successful examination by Board of Censors of the Medical Association of the State or the Boards of Censors of the several county medical societies in affiliation. Diplomas confer no right to practice. Senior Censor, W. H. Sanders, M.D., Mobile.

ALASKA.—No law.

ARIZONA.—Certificate of successful examination by Board of Territorial Medical Examiners, after presentation of diploma from a properly and lawfully organized medical college. Secretary of Board, C. D. Belden, M.D., Phenix.

ARKANSAS.—Practically no law.

CALIFORNIA.—Certificate issued on presentation of diploma from a medical college in good standing issued by one of the State Board of Examiners, regular, homeopathic or eclectic. Secretary representing State Medical Society, G. G. Wadsworth, M.D., San Francisco.

COLORADO.—Certificate based on diploma from a recognized medical college or successful examination by State Board of Medical Examiners. Secretary of Board, T. A. Hughes, M.D., Denver.

CONNECTICUT.—Certificate of successful examination by committee appointed by State Board of Health. Regular, homeopathic or eclectic. Diplomas confer no right to practice Secretary representing State Medical Society, G. A. Lindsley, M.D., New Haven.

DELAWARE.—Certificates conferred only by Medical Council after presentation of diploma from a legally incorporated medical college and successful examination by Board of Medical Examiners, either regular, homeopathic or eclectic. Diplomas confer no right to practice. Secretary of Medical Council, I. S. Vallendigham, Middletown.

DISTRICT OF COLUMBIA.—License by Board of Medical Supervisors after successful examination and diploma from a legally authorized medical college. Secretary of Board, W. G. Woodward, M.D., Washington.

FLORIDA.—Certificate of successful examination by District Board of Medical Examiners. Diplomas confer no right to

practice. Secretaries of District Boards (from Polk's Medical Directory, 1898), 1st, C. B. McKinnon, M.D., Pensacola; 2d, G. W. Lamar, M.D., Quincy; 3d, W. R. Chalkee, M.D., Lake City; 4th, R. H. Dean, M.D., Jacksonville; 5th, G. E. Welch, M.D., Palatka; 6th, L. W. Weedon, M.D., Tampa; 7th, R. L. Harris, M.D., Orlando.

GEORGIA.—License issued after satisfactory examination by the Board representing the regular, homeopathic or eclectic schools of medicine. Secretary representing regular school, E. R. Anthony, M.D., Griffin.

HAWAII.—Under the laws of the Republic of Hawaii certificates are issued to graduates from recognized colleges after a satisfactory examination by the Board of Health.

IDAHO.—Certificate from State Board of Medical Examiners based on diploma and satisfactory examination by the Board. Secretary, C. L. Sweet, M.D., Boise.

ILLINOIS (law now in force).—Certificate by the State Board of Health based on diploma from a recognized medical college or a satisfactory examination by the Board. (Proposed law).—License by Board of Medical Examiners based upon diploma of a recognized medical college and a satisfactory examination by the Board. License to be renewed annually, at the discretion of the Board. Secretary, J. A. Egan, M.D., Springfield.

INDIANA.—Certificate based upon a diploma from a recognized medical college or after a satisfactory examination by the State Board of Medical Examiners. Secretary, W. F. Curryer, M.D., Indianapolis.

INDIAN TERRITORY.—Cherokee Nation: An examination by Board of Medical Examiners. Secretary, I. W. McClendon, M.D., Colgate. Choctaw Nation: the same, except an annual fee of $10 for a permit.

IOWA (In force Jan. 1, 1899).—Certificate from State Board of Medical Examiners based upon a diploma from a recognized medical college and satisfactory examination by the Board. Secretary, J. F. Kennedy, M.D., Des Moines.

KANSAS.—Registry of diploma from some "respectable medical college," or certificate of qualification from some state or county medical society. Secretary of State Board, H. Z. Gill, M.D., Pittsburg.

KENTUCKY.—Certificate from State Board of Health based upon diploma from "some reputable and legally chartered medical college endorsed as such by the Board." Secretary, J. N. McCormack, M.D., Bowling Green.

LOUISIANA.—Certificate based upon diploma from a medical college in good standing and a satisfactory examination by the State Board of Medical Examiners. Secretary, representing State Medical Society, H. S. Cocram, M.D.

MAINE.—Certificate of successful examination by the State Board of Registration. Secretary, A. K. P. Meserve, M.D., Portland.

MARYLAND.—A certificate based upon a satisfactory examination by the State Board of Medical Examiners. Secretary, representing Medical and Chirurgical Society of Maryland, J. McP. Scott, Hagerstown.

MASSACHUSETTS.—License after a satisfactory examination by the State Board of Registration in Medicine. Secretary of Board, Edwin C. Harvey, Boston.

MICHIGAN.—Registration with the county clerk of a diploma from any legally authorized medical college.

MINNESOTA (In force Jan. 1, 1899).—License issued by the State Board of Medical Examiners after a satisfactory examination and presentation of evidence of having attended four full courses, at a recognized medical college, of at least twenty-six weeks each, no two courses being in the same year. Secretary, J. B. Brimhall, M.D., St. Paul.

MISSOURI.—Similar to Illinois. Secretary of State Board of Health, Paul Paquin, M.D., St. Louis.

MONTANA.—A certificate based upon a diploma from a recognized medical college or after a satisfactory examination by the State Board of Medical Examiners, and evidence of having attended four courses of lectures of at least six months each. Secretary, Henry Chapple, M.D., Billings.

NEBRASKA.—A certificate issued by the State Board of Health upon a diploma from a "legally chartered medical school or college in good standing." Holders of diplomas must have attended four courses of lectures in four separate years. Secretary of Board, B. F. Crummer, M.D., Omaha.

NEVADA.—A record of diploma filed with county recorder from "some regularly chartered medical school."

NEW HAMPSHIRE.—License by State Board of Medical Examiners after a satisfactory examination by the Board, or based upon license from another State having an equal standard of qualifications. Secretary representing New Hampshire Medical Society, J. T. Greely, M.D., Nashua.

NEW JERSEY.—A license after successful examination by the State Board of Medical Examiners, diploma from a recognized medical college. Candidates must have studied medicine four years, including three courses of lectures in different years, and present evidence of preliminary education. Secretary of the Board, E. L. B. Godfrey, Camden.

NEW MEXICO.—Certificate based upon a diploma from a medical college in good standing, or a satisfactory examination by the Territorial Board of Health. Secretary, J. M. Cunningham, M.D., Las Vegas.

NEW YORK.—License issued by State Board of Examiners, after a satisfactory examination and evidence of having studied medicine not less than four years in a medical college having a satisfactory standard. Secretary representing New York State Medical Society, Melvil Dewy, M.D., Albany.

NORTH CAROLINA.—A license issued upon successful examination by the State Board of Medical Examiners. Diploma confers no right to practice. Secretary, H. B. Weaver, M.D., Asheville.

NORTH DAKOTA.—Similar to North Carolina. Secretary, H. M. Wheeler, M.D., Grand Forks.

OHIO.—(In force Jan. 1, 1899).—Certificate issued by a State Board of Registration and Examination, based upon diploma from a college requiring four years of study and in good standing with the Board. Secretary of the Board, Frank Winders, M.D., Columbus.

OKLAHOMA.—A license based upon a diploma of a "medical college," or after a satisfactory examination by the Board of Examiners. Secretary, L. Haynes Buxton, M.D.

OREGON.—A license issued by the State Board of Medical Examiners after a satisfactory examination. Secretary, B. E. Miller, M.D., Portland.

PENNSYLVANIA.—A license granted by the Medical Council after a satisfactory examination and a diploma from a recognized medical college. Secretary, Hon. J. W. Latta, Philadelphia.

PORTO RICO.—Graduates from a reputable medical college will probably be allowed to practice.

RHODE ISLAND.—A certificate based upon a diploma from a recognized medical college having a four year course, or after a satisfactory examination by the State Board of Health, Secretary, G. T. Swarts, M.D., Providence.

SOUTH CAROLINA.—A certificate issued by the State Board of Medical Examiners to holders of diplomas after a successful examination. Secretary, S. C. Baker, M.D., Sumter.

SOUTH DAKOTA.—A license by the State Board of Health based upon a diploma from a recognized medical college. Secretary, F. H. Files, Sioux Falls.

TENNESSEE.—A license after a satisfactory examination by the State Board of Medical Examiners. Secretary, T. J. Happel, Trenton.

TEXAS.—A license after examination by the District Board of Medical Examiners.

UTAH.—A certificate issued to holders of diplomas after an

examination by the State Board of Medical Examiners. Secretary, B. Stringham, M.D., Salt Lake City.

VERMONT.—A license based upon a diploma from a reputable medical college, or after examination by the Board of Censors. Secretary, representing Vermont Medical Society, H. H. Lee, M.D., Wells River.

VIRGINIA.—A license after an examination by the State Board of Medical Examiners. Secretary, R. S. Martin, Stuart.

WASHINGTON.—Similar to Virginia. Secretary, J. H. Hoxley, M.D., Spangle.

WEST VIRGINIA.—A license after an examination by the State Board of Health. Secretary, A. R. Barbee, M.D., Mount Pleasant.

WISCONSIN.—A license based upon a diploma from a recognized medical college, or after a satisfactory examination by the Board of Medical Examiners. Secretary, H. M. Ludwig, M.D., Richland Center.

WYOMING.—The record of diploma with the Registrar of Deeds.

Philadelphia.

PREVENTION OF DIPHTHERIA.—For several weeks there has been a gradual increase in the number of cases of diphtheria among children, especially those attending the public schools of the city and it became so general that it at once attracted the attention of the Board of Health, which body is making heroic efforts to reduce the number of cases, on the principle that "an ounce of prevention is worth a pound of cure," and orders have been issued giving definite information to janitors of the different buildings used for school purposes describing in detail the proper means of using disinfectants about the rooms, halls and stairways. Dr. Woodward of the Board of Health has presented a resolution that the diphtheria placard should not be removed from any house in which there has been a case of diphtheria and that there shall be no disinfection of bedding or clothing until bacteriologic examination made in the laboratory of the Board of Health shall have demonstrated that the bacilli of diphtheria are absent from the throat of the patient.

RED CROSS SOCIETY.—The building formerly owned by the Pennsylvania Epileptic Hospital has been turned over to the Red Cross Society of Pennsylvania for the establishment of a new hospital. The building has been furnished by the equipage formerly used at Camp Meade, but owing to the work having been finished at that place the material was brought here. A staff of five physicians will look after patients, and is composed of Drs. Richard Clemon, Samuel Ashhurst, Clarence B. Franklin, Samuel Gerhardt and I. W. O'Neil. Twenty nurses will be in attendance. The capacity of the hospital is sixty beds placed in two wards, and it is stated that the Red Cross Society takes great pride in its new venture and is leaving no stone unturned to make it a first-class hospital. A train was dispatched during the week to Camp Meade and sixty soldiers taken to the new hospital. The institution is in need of supplies such as linen, tables, chairs, china, tinware, etc., which it is hoped will soon be replaced by new material.

HOSPITAL TRAINS.—The War Department has requested the National Relief Association to send hospital trains to Camp Meade and bring ninety sick soldiers to Philadelphia hospitals. October 30, twenty-four patients were brought here and sent to the Presbyterian and Jefferson Hospitals. October 31, another train was dispatched under the charge of a staff composed of ten physicians from the University, Presbyterian and German Hospitals, together with a corps of twelve nurses. November 1, at the request of the War Department, the National Relief Association dispatched another train to Camp Meade returning with fifty six patients, many of whom are suffering from typhoid fever. Of this number twenty were sent to the St. Joseph Hospital, twenty to the German Hospital, and sixteen to the Jewish Hospital. On November 4, it was proposed to bring about 150 soldiers to be assigned to the different hospitals.

MORTALITY STATISTICS.—For the week ending November 12, there was a total of 394 deaths, an increase of 46 over last week and of 61 over the corresponding period of last year. Of the total number of deaths, 82 occurred in children under the age of five years.

KNOCK-OUT DROPS GIVEN SOLDIERS.—Two soldiers, members of the Fourteenth Pennsylvania Volunteers, while in attendance upon the jubilee festivities here last week became acquainted with a man who gave them liquor from a bottle he took from his pocket. Shortly afterward they were found in an unconscious condition and were taken to the hospital. The death of one man had recently occurred under similar circumstances. An autopsy was made by the Coroner's physician, but the actual cause of death has not been divulged, though it is reported that the patient died of poison. Detectives are at work upon all the cases and it is thought traces have been found which may lead to the apprehension of the guilty persons. While chloral is the usual ingredient of knock out drops, it is not yet known whether or not it is responsible for the serious illness of these two soldiers and the death of the one man.

CAMDEN.—Several members of the Water Committee of the city of Camden recently discussed the question of better water for that city. From the fact that the contractor had cut off the supply from the artesian wells and had started to draw the city's supply of water from the Delaware River, it is feared that an epidemic of typhoid fever will sweep over the town. It is stated that the reports from the Board of Health go to show that since the artesian system had been in vogue typhoid fever had diminished from 40 to 60 per cent., which decrease was thought to be due to the purer water. The trouble came about over the fact that the city demanded of the contractor that a test be made regarding the amount of water supplied, but this was refused and the supply of water cut off. In this connection it may be stated that the trial of Peter E. Smith of Philadelphia, who is charged by Walter N. Stevenson a member of the City Council, with an attempt to bribe the latter, has been before the court this week. Strange to say Smith is also a member of the City Council. Stevenson stated under oath that Smith offered him $5000 for his vote in favor of the Schuylkill Valley Water Bill, which attracted so much attention during the epidemic of typhoid fever here last spring. On the other hand, the defendant has introduced a plea of alibi, and witnesses have sworn that it was impossible for him to have been present in Stevenson's office at the time the latter states the bribe was offered. Charges and counter-charges are being made by both parties, and the case elicits no little public interest. But the fact is painfully evident, at any rate, that the people are still using unfiltered Schuylkill water, as proved each week by the number of deaths from typhoid fever.

UNIVERSITY OF PENNSYLVANIA.—Owing to the death of Dr. William Pepper, president of the alumni of the University of Pennsylvania, the Board of Managers of the General Memorial Society recently elected Effingham P. Norris, '71, to fill the vacancy. A memorial gate will be erected on the University campus, by the class of 1872, to cost $3000. The General Alumni have undertaken to raise the balance of $200 solicited by the Houston Club Memorial Committee for the erection of an archway in the new dormitory system in memory of the students who were killed during the late Spanish war.

GIFT OF $1,000,000.—Mrs. Imogene Bennett Wellens, daughter of Joseph M. Bennett, has begun the contest against the probate of the will of the deceased. It will be remembered that Joseph M. Bennett recently gave to the University of Pennsylvania certain pieces of property adjacent to the University grounds, upon which were to be erected certain buildings to "further aid and encourage the said trustees in carrying out more practically and thoroughly the co education of women and girls." . . . Besides this bequest various other ones were made to charitable institutions. In the will Mrs. Wellens was entirely ignored.

PRECAUTIONS AGAINST THE PLAGUE.—Owing to the receipt of a message by the Marine-Hospital Service and by public reports of the death of three persons from bubonic plague in Vienna, the quarantine officers of this city have received instructions from Washington to use stringent measures in regard to preventing the introduction of the disease by steerage passengers who have been through the infected district of Europe.

REPORT OF NATIONAL RELIEF COMMISSION.—Mr. George C. Thomas, treasurer of the National Relief Commission, makes known the following contributions: Cash previously received, $78,173.47; items, 885; value of supplies received to date, $40,345; grand total, cash and supplies, $118,603.47.

NATIONAL RELIEF ASSOCIATION.—At a recent meeting of the executive committee of the National Relief Association, two gentlemen were appointed to go to Washington to confer with the Secretary of War relative to the future work of the Commission. The committee is composed of President Converse and Secretary French. It will be remembered that the National Relief Association has been doing noble work in caring for the sick soldiers in the army camps and in bringing them to this city to be placed in well-equipped hospitals. It now seems that the Commission is being overwhelmed and it is stated that much of the work now done by them in fact should be done by the government. It is also reported that the Commission has been bearing part of the government's expense in this matter and the two members have been dispatched to Washington to look after the matter.

HONOR TO NAME OF FORMER PHILADELPHIAN.—The President has given direction to the proper authorities in charge designating that the general field hospital at Camp Lexington, Ky., be named John Blair Gibbs, U. S. A., General Hospital, in honor of that much beloved officer who was killed in the second skirmish of the American troops at Guantanamo on the night of June 12. Dr. Gibbs formerly lived in Philadelphia, graduating at the University of Pennsylvania, but in recent years lived in New York, where he held prominent positions on the staff of the Roosevelt Hospital and a prominent medical college.

Washington.

HEALTH OF THE DISTRICT.—The report of Health Officer Woodward for the week ended October 29 gives the total number of deaths as 120—65 white and 55 colored. The principal causes were: Apoplexy, 8; consumption, 12; diphtheria, 7; heart disease, 13; diseases of kidneys, 8; malarial fever, 5; pneumonia, 10; scarlet fever, 1; typhoid fever, 6. The total number of births was 105—53 white and 52 colored. At the close of the week there were 139 cases of diphtheria and 106 cases of scarlet fever under treatment.

HEALTH REGULATION ENFORCED.—The father of a child convalescing with scarlet fever was fined in the police court for violating the law for the prevention of the spreading of contagious diseases. One of the medical inspectors of the health department found the convalescing child on the street before the official quarantine had been removed; the father was held responsible and was fined $15.

PHYSICIANS APPOINTED.—On the recommendation of Health Officer Woodward, John H. Stoutenburgh has been appointed by the Commissioners to the position of Assistant Medical Sanitary Inspector, with a compensation of $2.50 *per diem*. J. F. Reppeti will act as physician to the poor during the assignment of Dr. Stoutenburgh. L. E. LeFetra has been appointed medical school inspector in New York City. Dr. LeFetra passed first in the competitive examination for the position, 276 applicants being examined.

SURGEON SUED.—A patient entered suit recently against Dr. George C. Burton to recover alleged damages in the sum of $25,000. The plaintiff claims to have suffered from a shortening of a limb after a fracture, and sets up the stereotyped charge of "unskilful doctor."

PUBLIC HEALTH COMMITTEE.—At the meeting of the Committee on Public Health of the Washington Board of Trade, recently held, it was decided to recommend to Congress the filtration of the city water-supply, the extension of the sewer system, and the reclamation of the Anacostia flats. The latter recommendation was considered particularly important, as a large number of the paludal diseases prevalent in Washington are traced directly as originating from these flats. The report of the Commandant of the U. S. Navy Yard, the surgeon-in-charge of the Government Hospital for the Insane, and the Washington Asylum Hospital, point out the disease-spreading influence of this cess-pool. The Superintendent of Public Schools for the eastern section of the city, submitted a tabulated statement showing the number of cases of malarial diseases among pupils who reside in this locality.

THE FORTNIGHTLY CLUB.—The 79th meeting of the Fortnightly Club was held at the residence of Dr. A. F. A. King, on the 28th ult.

Work of Fiction.—Dr. Weir Mitchell's novel, "The Adventures of Francois," has been issued simultaneously in New York, London, Canada and Australia. In New York the twenty-fifth thousand was on the press before publication.

An Effect of Diet.—Mrs. Dix: "Don't you think your husband is rather headstrong for an invalid?" Mrs. Hix: "Yes, and the doctor's to blame for it, too." Mrs. Dix: "Indeed! And why, pray?" Mrs. Hix: "He refuses to allow him to take any nourishment but goat's milk."—Chicago *News*. But suppose the patient should become bull-headed in his obstinacy?

CHANGE OF ADDRESS.

Allen, C. J., from East Barnard, Vt., to 6 Winthrop St., Winchester, Mass.
Christenson, A., from Washburn to Wausau, Wis.
Crook, L. F., from Hico to Adell, Tex.
Ellis, E. J. C., from Clayton to Benzonia, Mich.
Hayes, T. D., from Chicago, Ill., to Arbroth, La.
Hudson, A. S., from 271 to 290 Tremont St., Boston, Mass.
Ketcham, C. L., from Cincinnati, O., to New Alsace, Ind.
Matteson, D. E., from Lima, O., to Marion, Ind.
Rollins, F. H., from West Salem, Wis., to St. Charles, Minn.
Terrill, L. B., from Anderson, Ind., to Continental Bldg., Memphis, Tenn.
Yates, H. W., from St. Luke's Hospt. to 1411 Fort St. W., Detroit, Mich.

LETTERS RECEIVED.

Allen, C. L., Washington, D. C.; Ashmead, A. S., New York, N. Y.
Broga, W. W., Springfield, Mass.; Browning, B. Ray, Littleton, N. C.; Bernd, Henry & Co., St. Louis, Mo.; Boston, Gore & Web Mfg. Co., Chelsea, Mass.; Bickey, W. A., Toledo, O.
Cheney, J. V., Chicago, Ill.; Carnes, U. M., Cleveland, O.; Cokenower, J. W., Des Moines, Ia.; Curtis, A. M., Washington, D. C.; Clements, Jos., Kansas City, Mo.; Coe, H. W., Portland, Oregon; Chadwick, H. J., Grand Rapids, Mich.; Cleaves, M. A., New York, N. Y.; Coleman, W., Troy, O.; Cromwell, W. J., Decatur, Ill.; Crosby Fresian Fur Co., The, Rochester, N. Y.; Curl, J. L., Osa, Mo.; Clements, J., Kansas City, Mo.
David, E. L., (2), Louisville, Ky.; Davison, F. B., Fleetville, Pa.; Daniel, J. B., Atlanta, Ga.; Dixon, J. L., Springfield, Mass.
Fischer Chemical Importing Co., New York, N. Y.; Fischer, Louis (3), New York, N. Y.; Fuchs, W. C. (2), Chicago, Ill.; Frazer, W. A., Lyle, Minn.
Gardner, I. K., New Hampton, Ia.; Gould, Geo. M., Philadelahia, Pa.; Ganett, G. H., Miller Grove, Tex.
Hummel Adv. Agency, A. L., New York, N. Y.; Holmes, C. H., Cincinnati, O.; Harper & Brothers, New York, N. Y.; Hainlin, J. E., Davenport, Ia.; Hicks Newspaper Adv. Agency, New York, N. Y.
Jenks, H. D., Detroit, Mich.; Jones, D. J., Lisbon, O.; Jones, W. T., Georgetown, Tex.
Kress & Owen Co., New York, N. Y.; Kempson, J. F., New York, N. Y.
Lehn & Fink (2), New York, N. Y.; Lounsberry, L., Binghampton, N. Y.; Leuschner, R., Mt. Clemens, Mich.
Matteson, J. B., Brooklyn, N. Y.; Mellin's Food Co., Boston, Mass.; Merrell Chemical Co., W. S. (2), Cincinnati, O.; Minor, J. C., Hot Springs, Ark.; Merrick, M. B., Passaic, N. J.; Musser, J. H., Philadelphia, Pa.; Morse Adv. Agency, L. D., New York, N. Y.; Moure, E. J., Bordeaux, France; Mulford Co., H. K., Philadelphia, Pa.; Morrisson, Plummer & Company, Chicago, Ill.; Moore, Geo., Lynn, Mass.; McClanahan, H. W., Omaha, Neb.; McCall, H. B., Lenexa, Kas.; McCurry, J. H., Credit, Ark.; McKesson & Robbins (3), New York, N. Y.
Nind, J. Newton, Chicago, Ill.
O'Connor, W., Woodbine, Ia.
Patrick, H. T., Chicago, Ill.; Paul, E. Derrick Adv. Agency, New York, N. Y.; Pope, F. F., Ashby, Mass.; Pressey, A. J., Cleveland, O.; Publishers' Collection Agency (2), Chicago, Ill.
Randolph, J., Arvonia, Va.; Rio Chemical Co., St. Louis, Mo.; Rowley, W. S., Indianapolis, Ind.
Sprague, W. B., Eureka Springs, Ark.; Steele, W. J., Brooklyn, N. Y.; Smith, Kline & French Co., Philadelphia, Pa.; Straw, E. E., Rural Retreat, Va.; Schering & Glatz, New York, N. Y.
Trowbridge, L. S., Detroit, Mich.; Tri-Elixiria Remedy Co., Memphis, Tenn.
Van Houten & Ten Broeck, New York, N. Y.; Van Slyke, W. H., Hancock, Mich.
Warren, W. M., Detroit, Mich.; Willard State Hospital, Willard, N. Y.; Whetstone, A. S., Milaca, Minn.; West, S. L., Philadelphia, Pa.